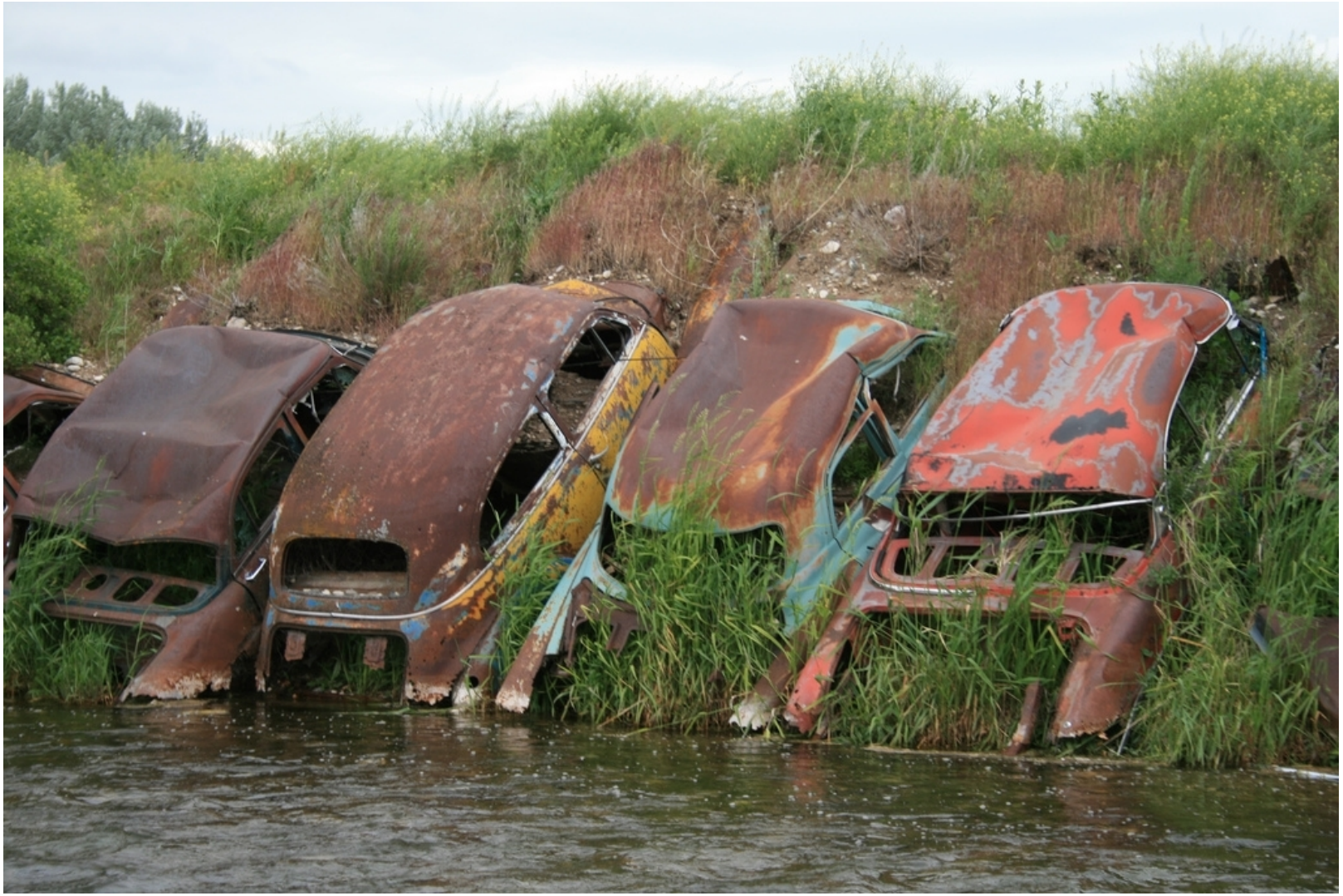
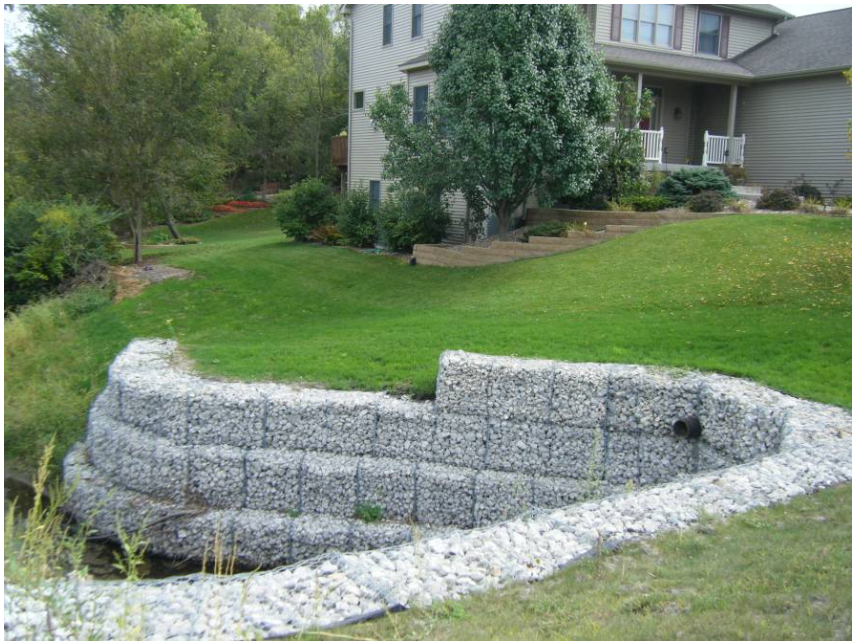
Stream Corridor Stabilization

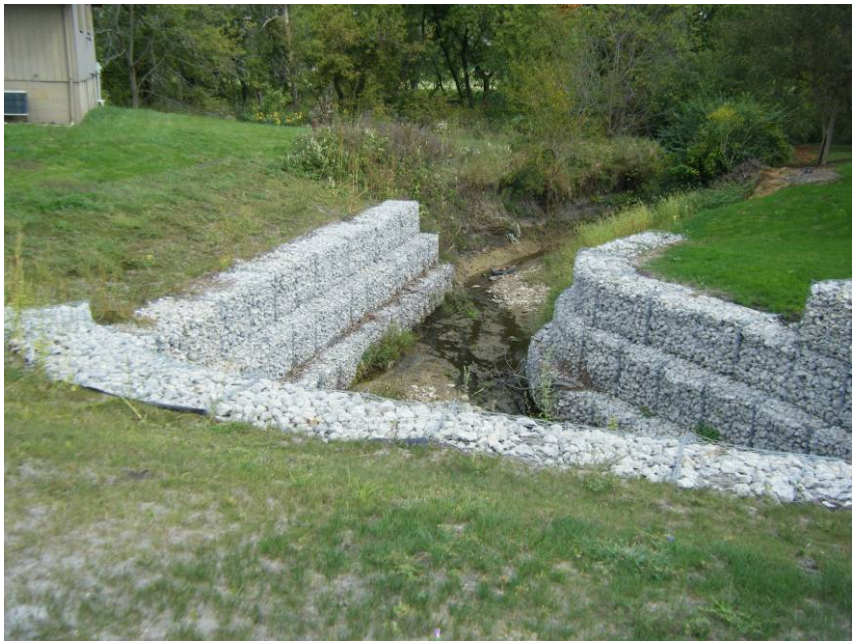
A major need in the urban and urbanizing landscapes of Iowa

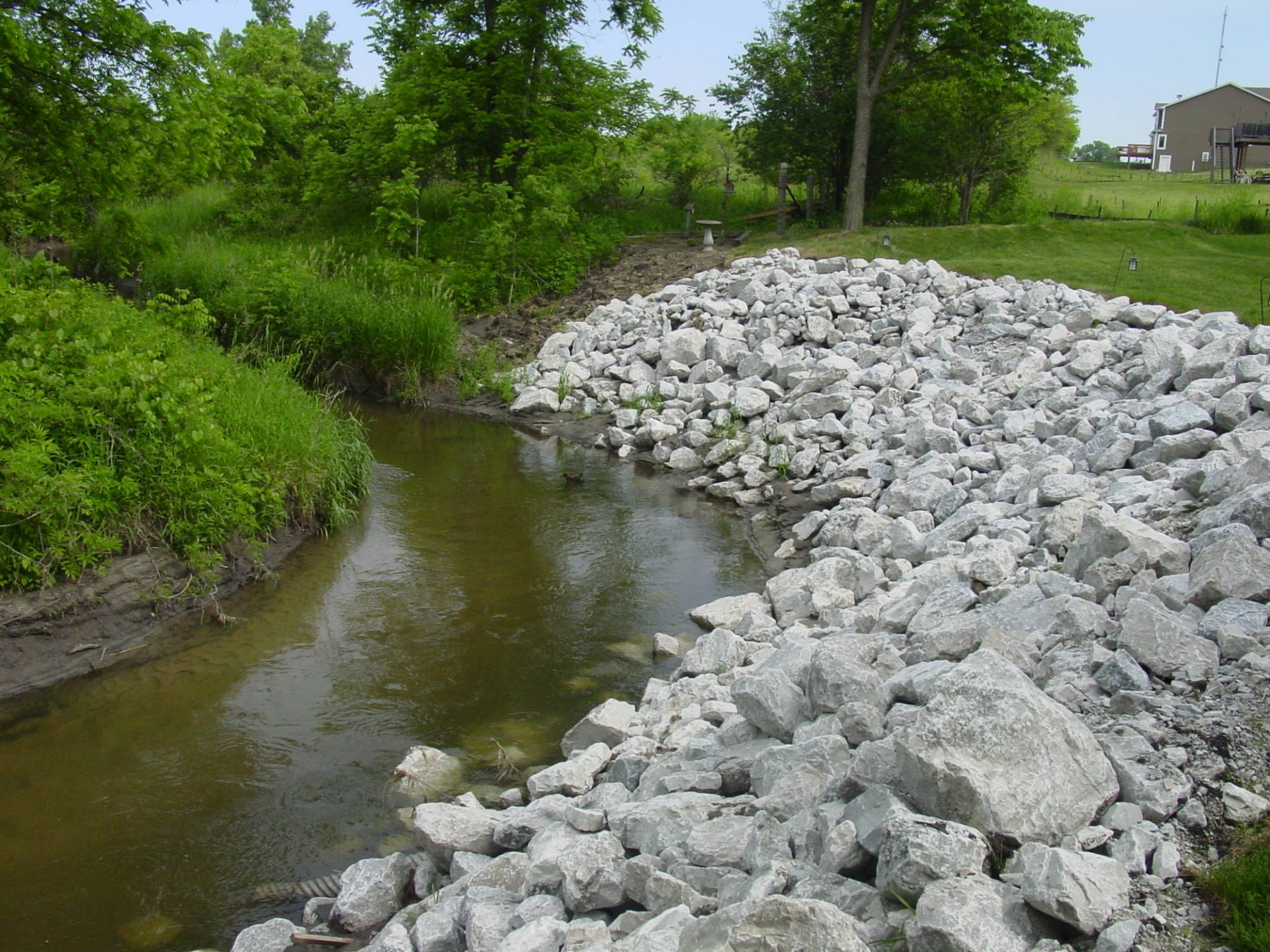
Stream Corridor Stabilization Not Bank Stabilization
Bank stabilization – just part of the process

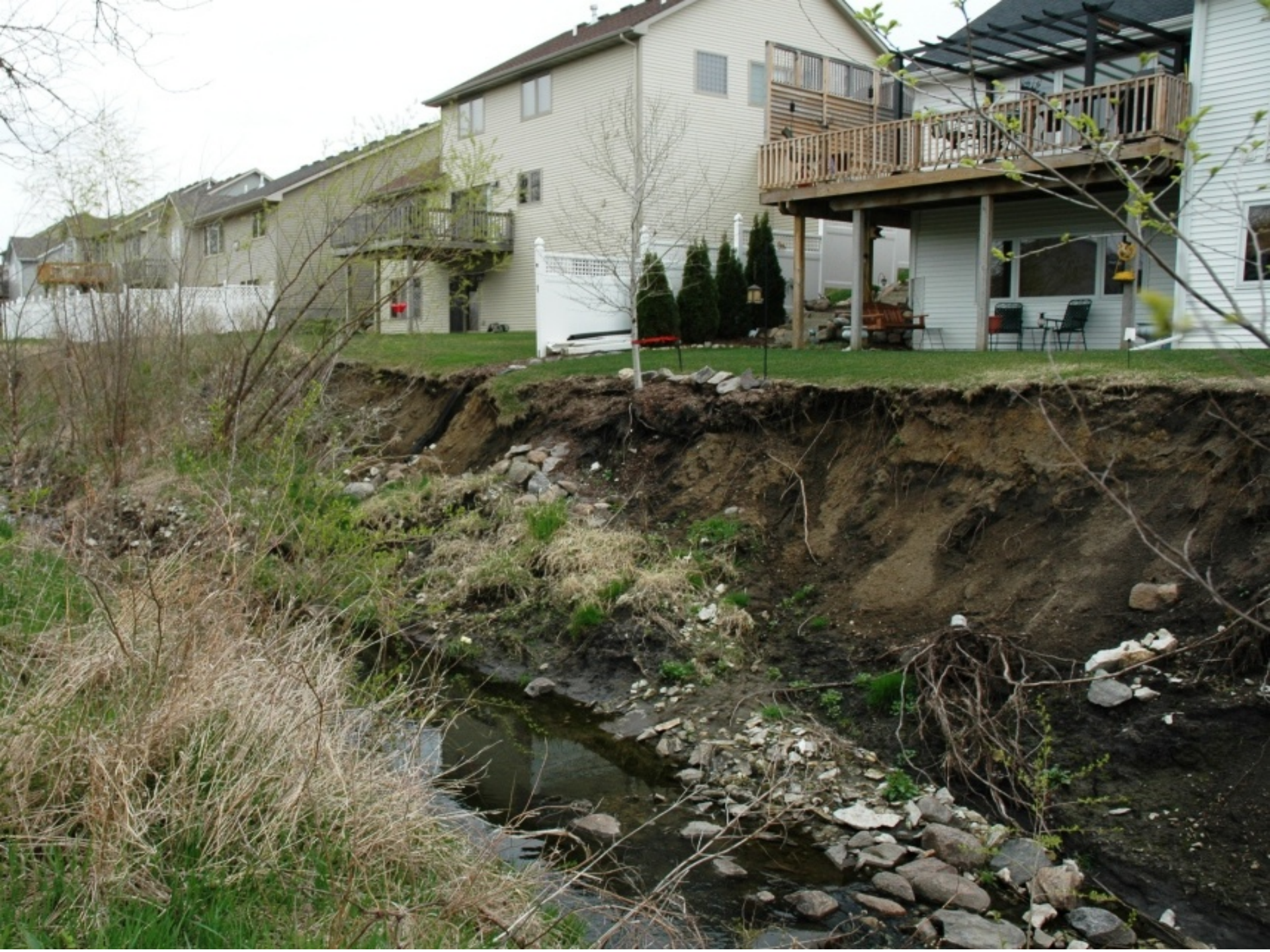


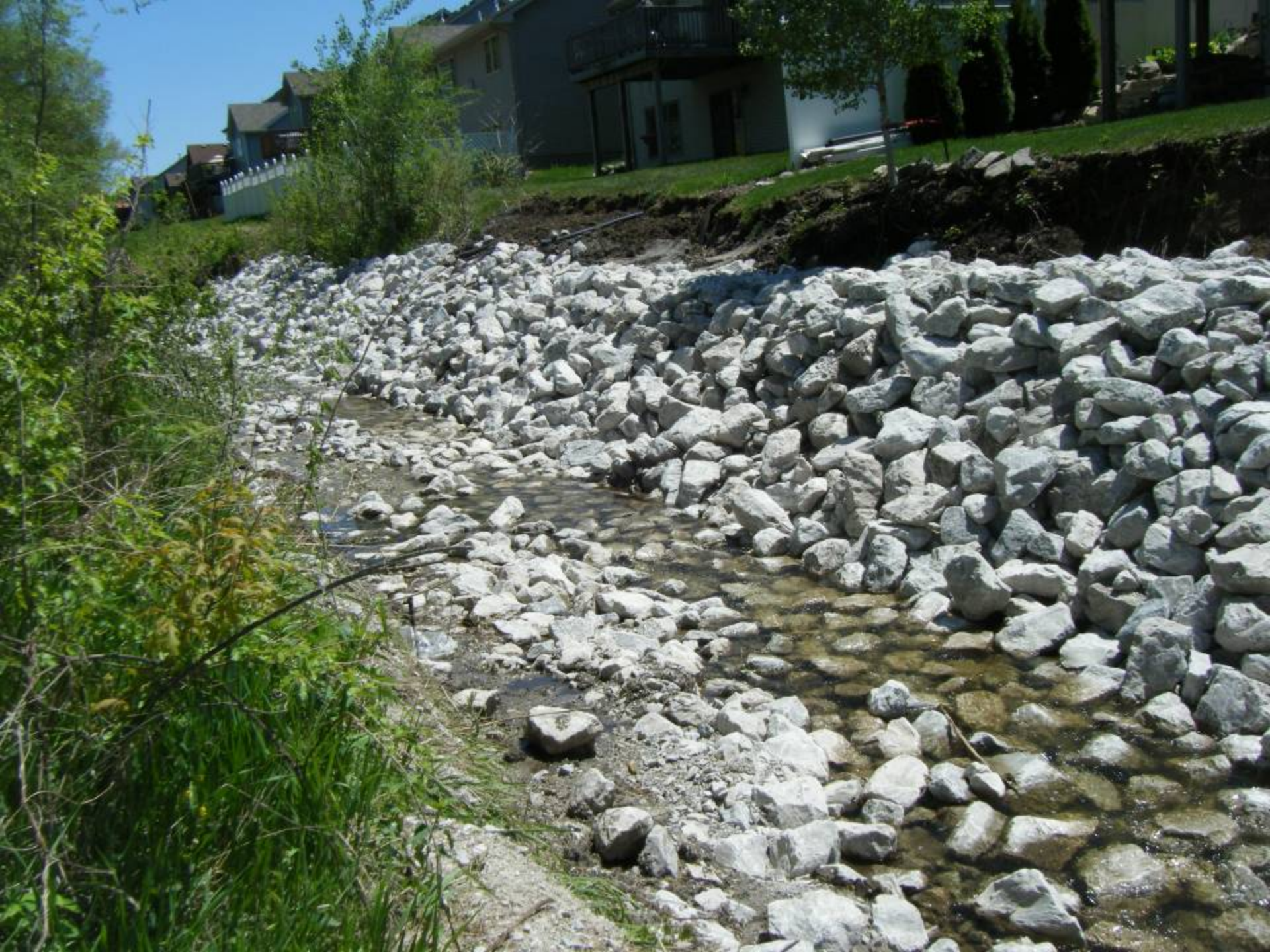
Spot treating eroding banks – addresses one concern, creates others







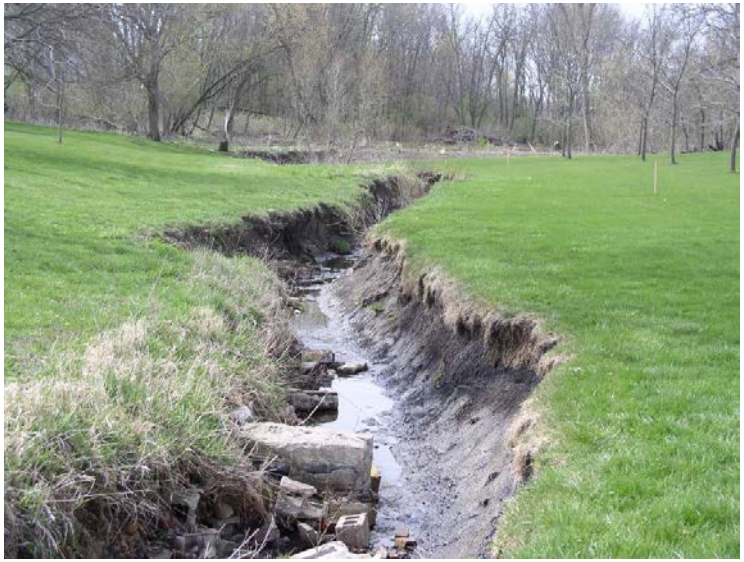


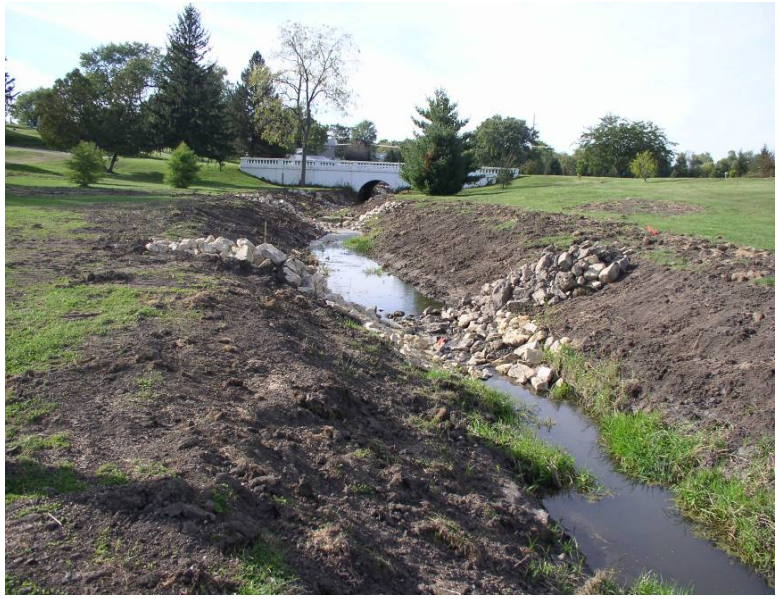


We must be comprehensive
(First do no harm)

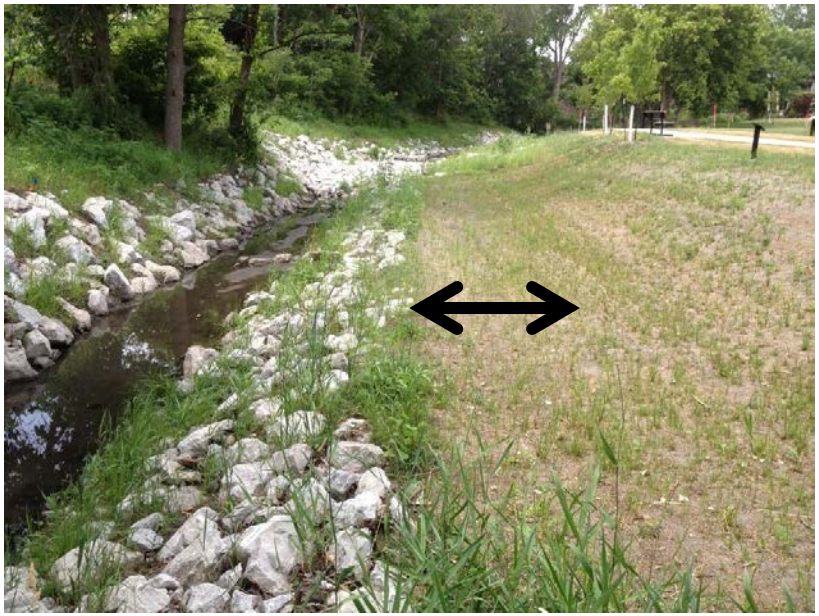
1. **Stop a downcutting bed**
2. **Slope back vertical, bare banks**
3. **Armor toes of slopes**
4. **Establish deep rooted native prairie vegetation**
5. Build a flood plain (if space and budget allow)
6. Remeander (if space and budget allow)
7. If you do these things you will reduce the energy and the erosive force of the stream and benefit the system (at the site and downstream)
8. Then - incorporate features that improve habitat and create fishing opportunities – make urban streams a community amenity

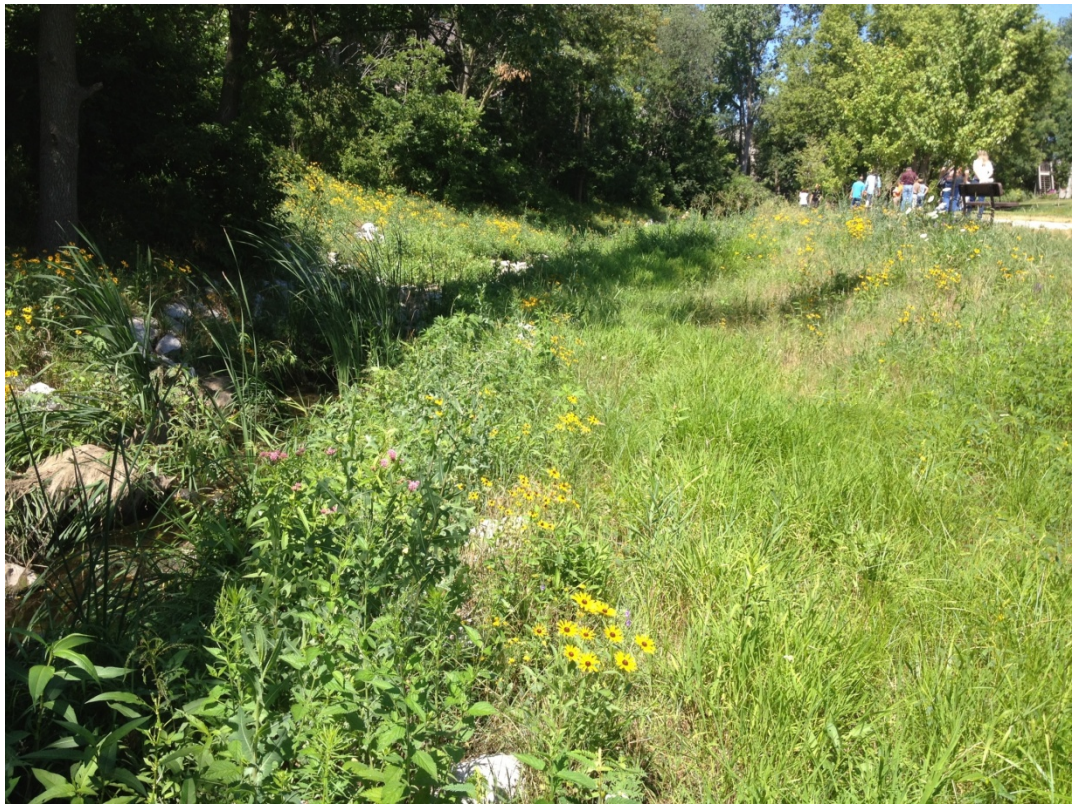
Stop downcutting / slope back banks



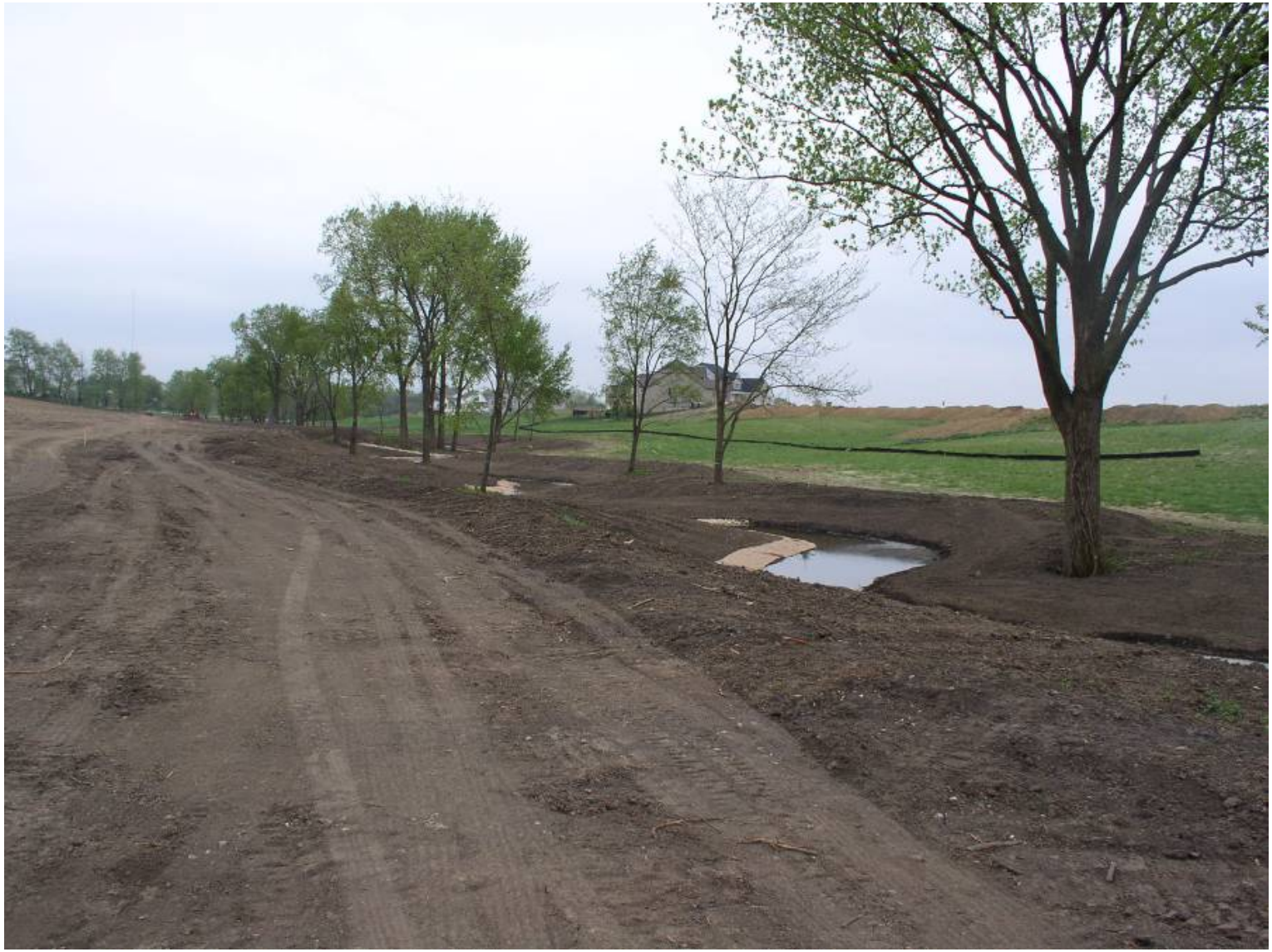


Armor toes / build flood plains

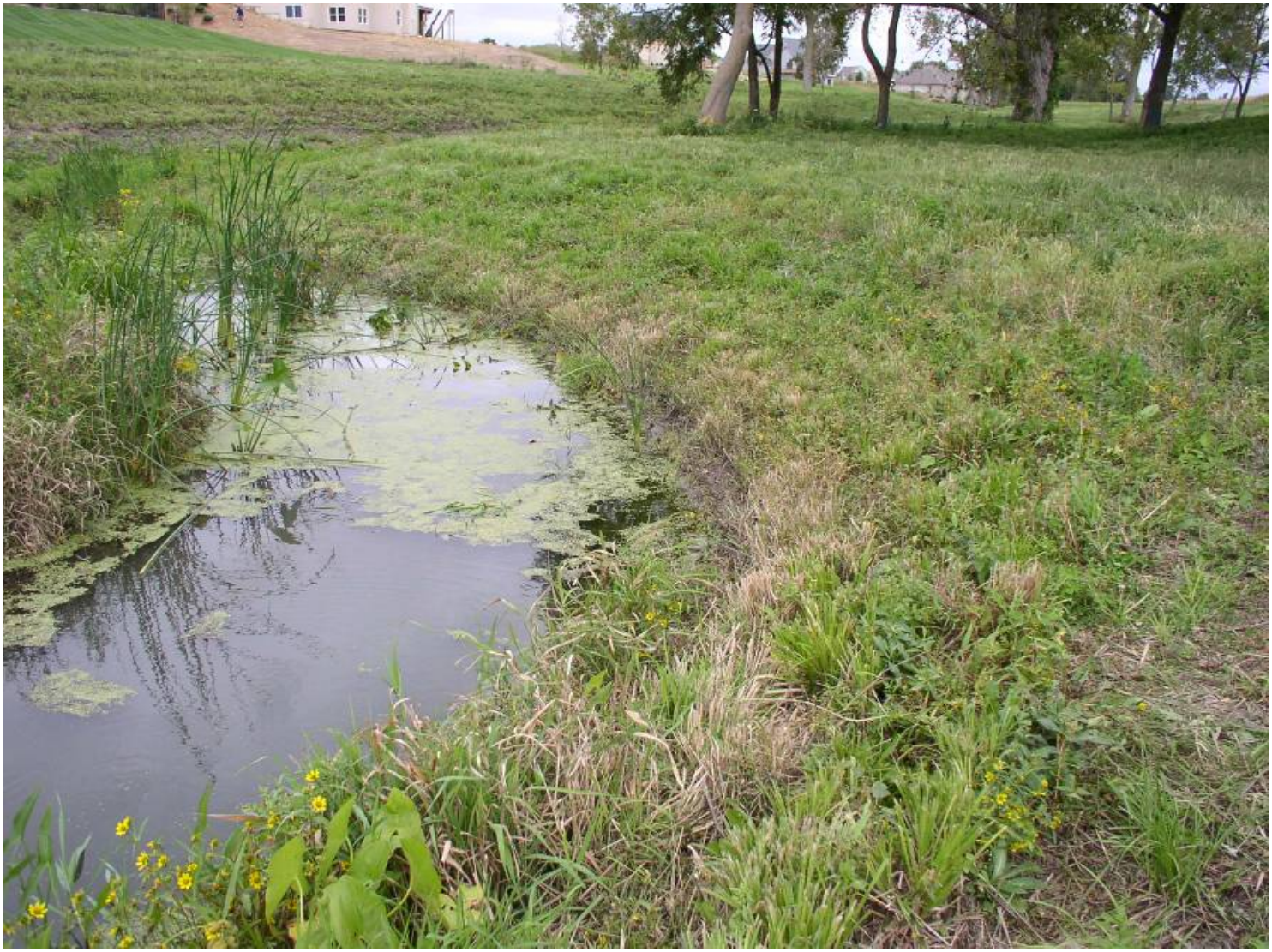


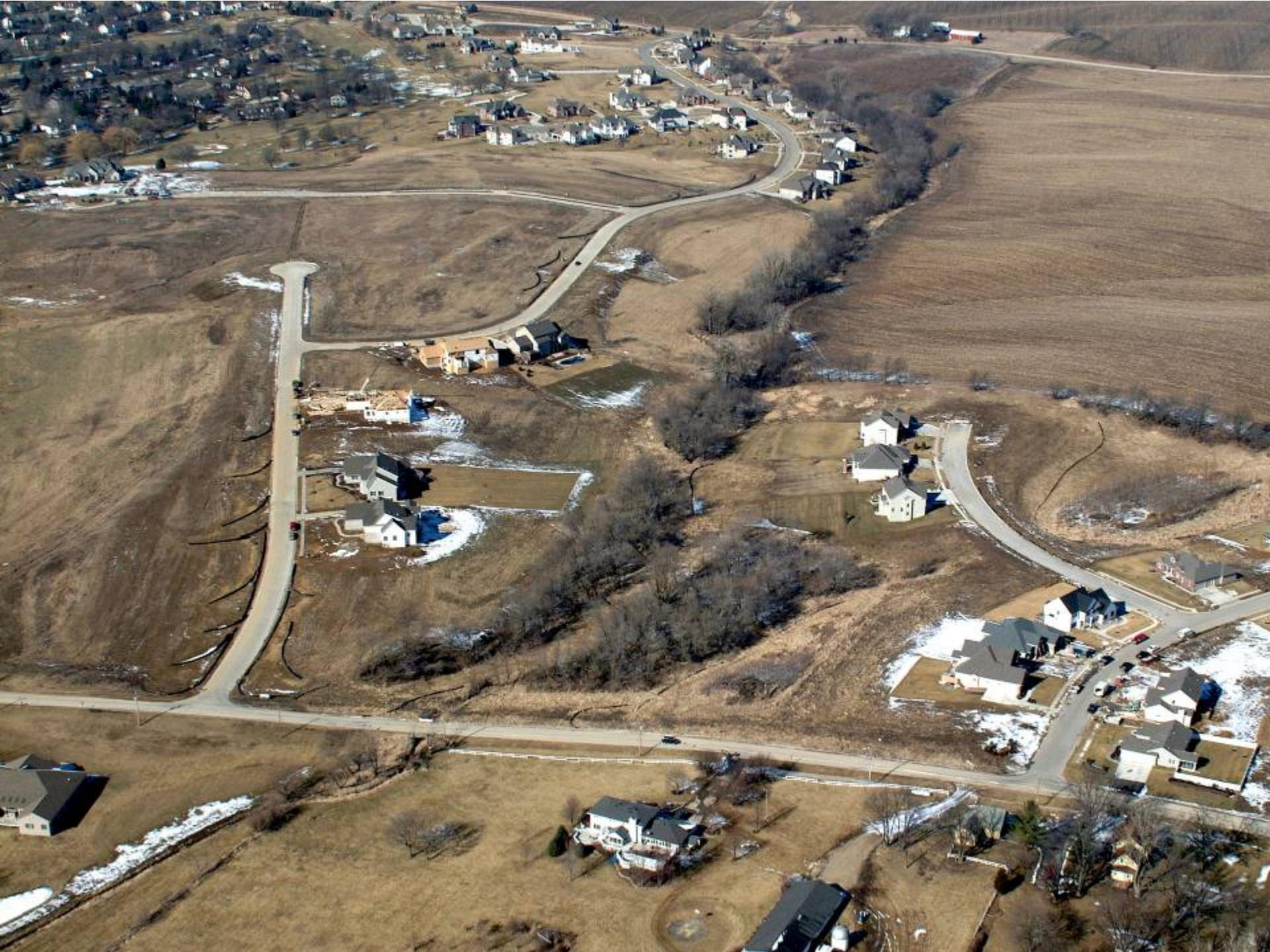


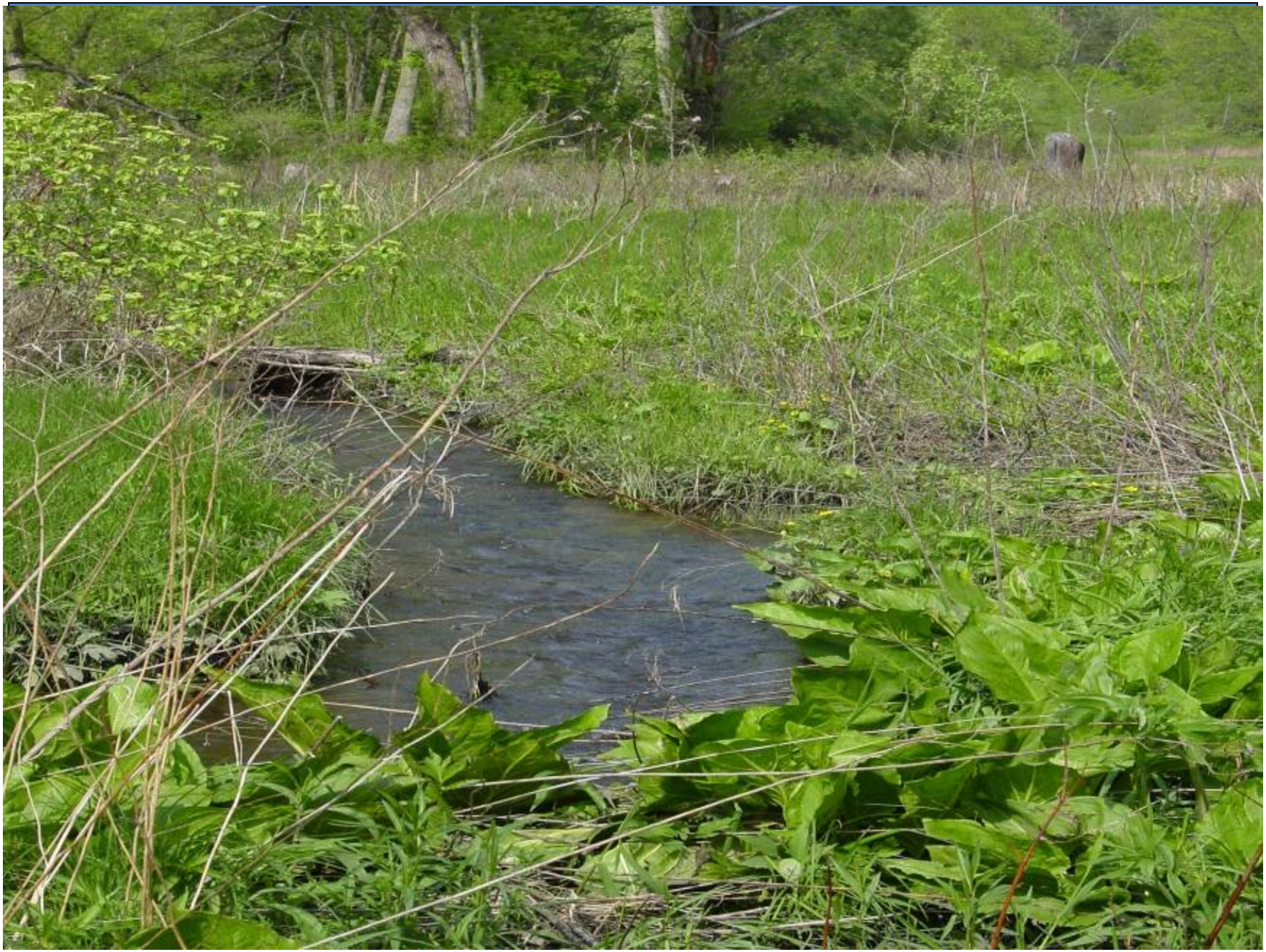
Re-meander

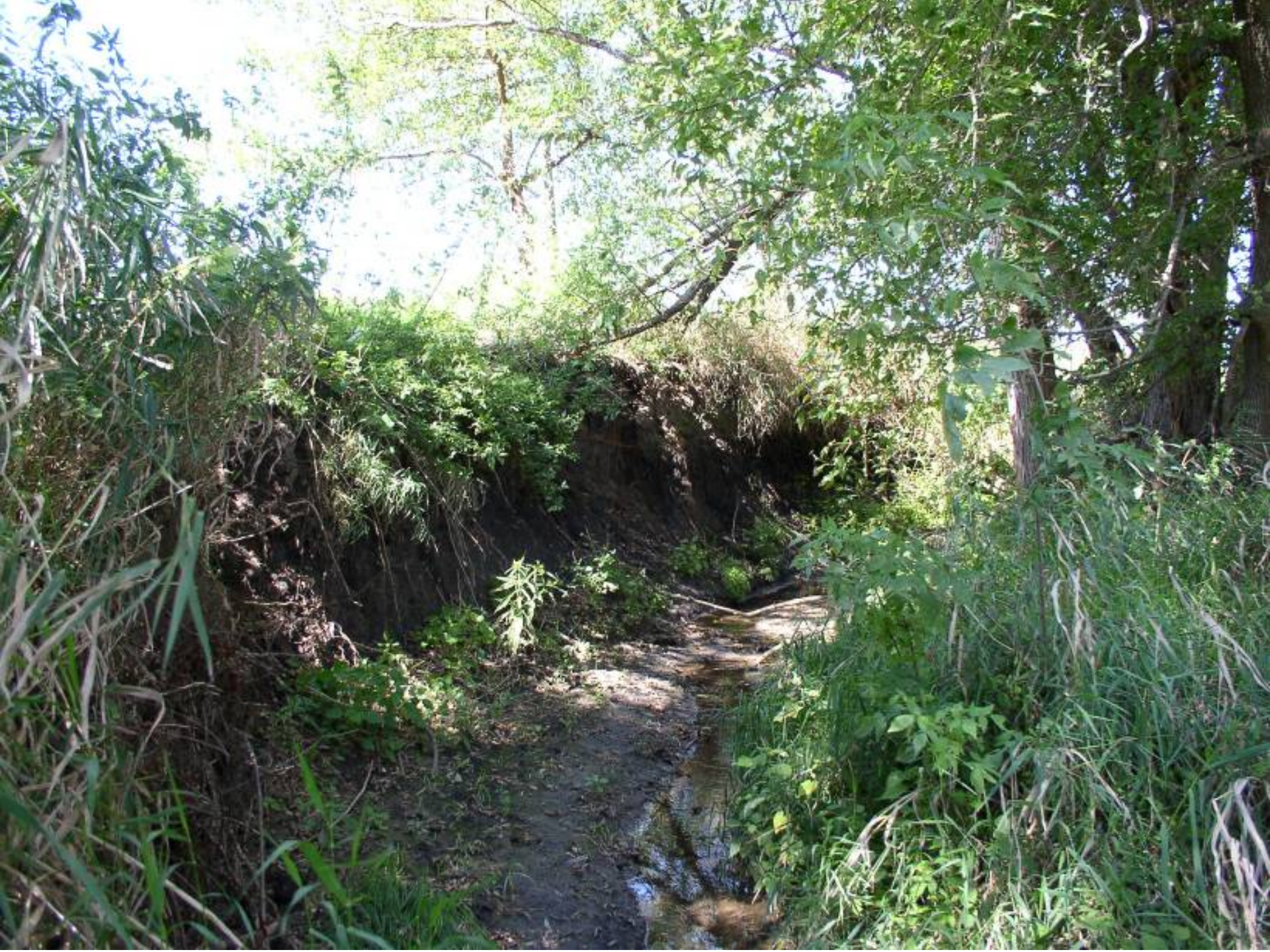


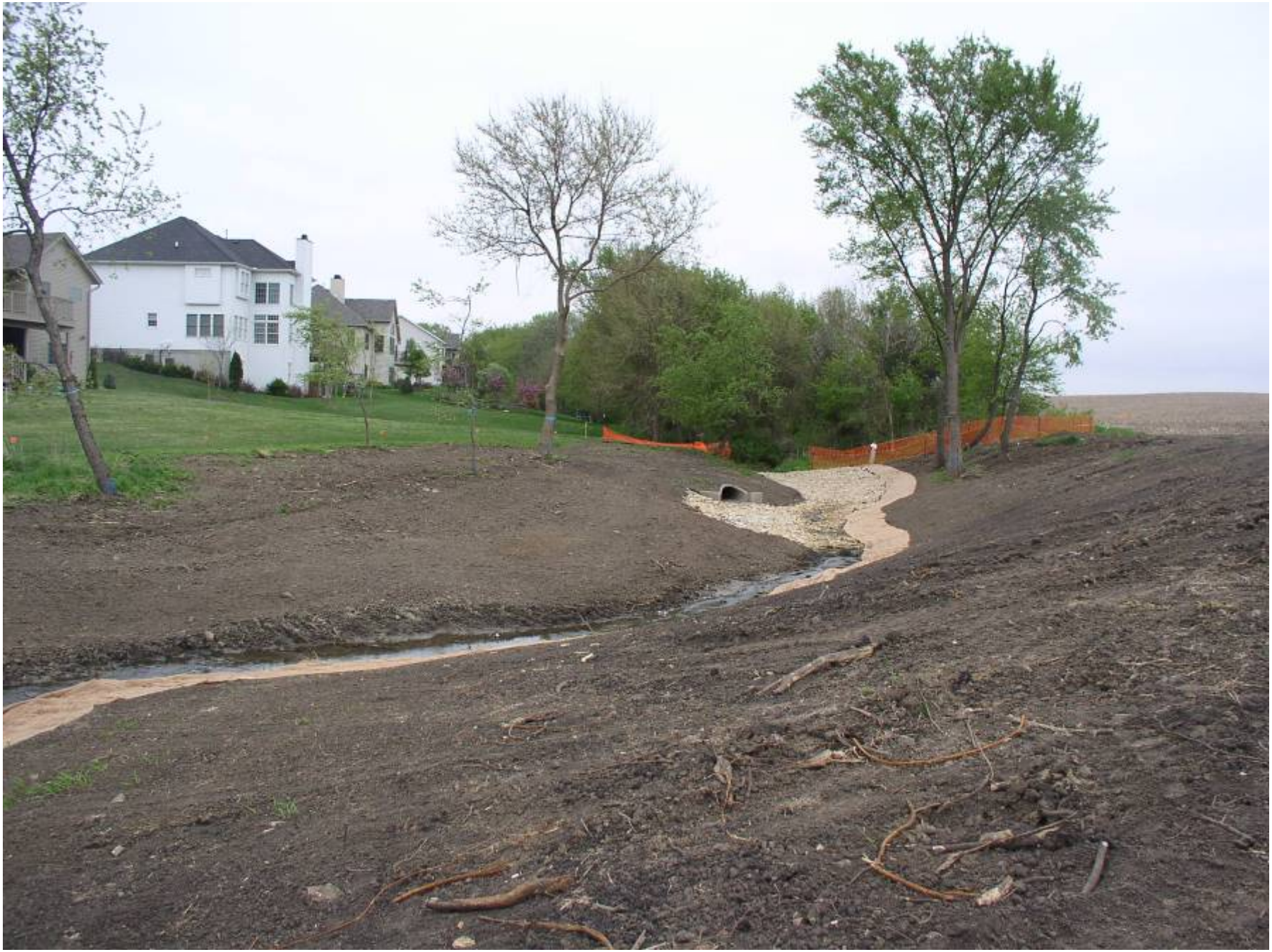
Establish deep rooted native prairie vegetation

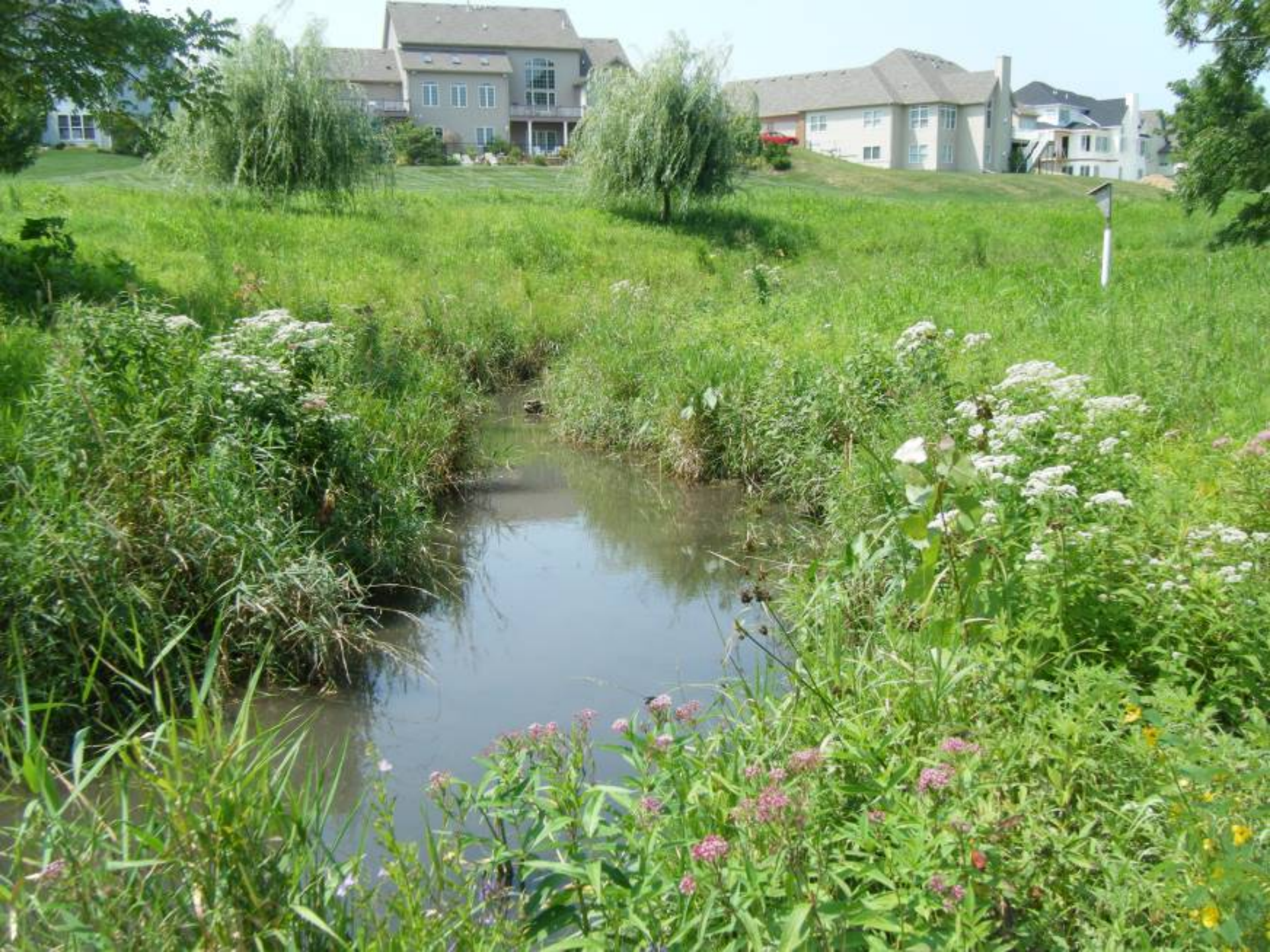


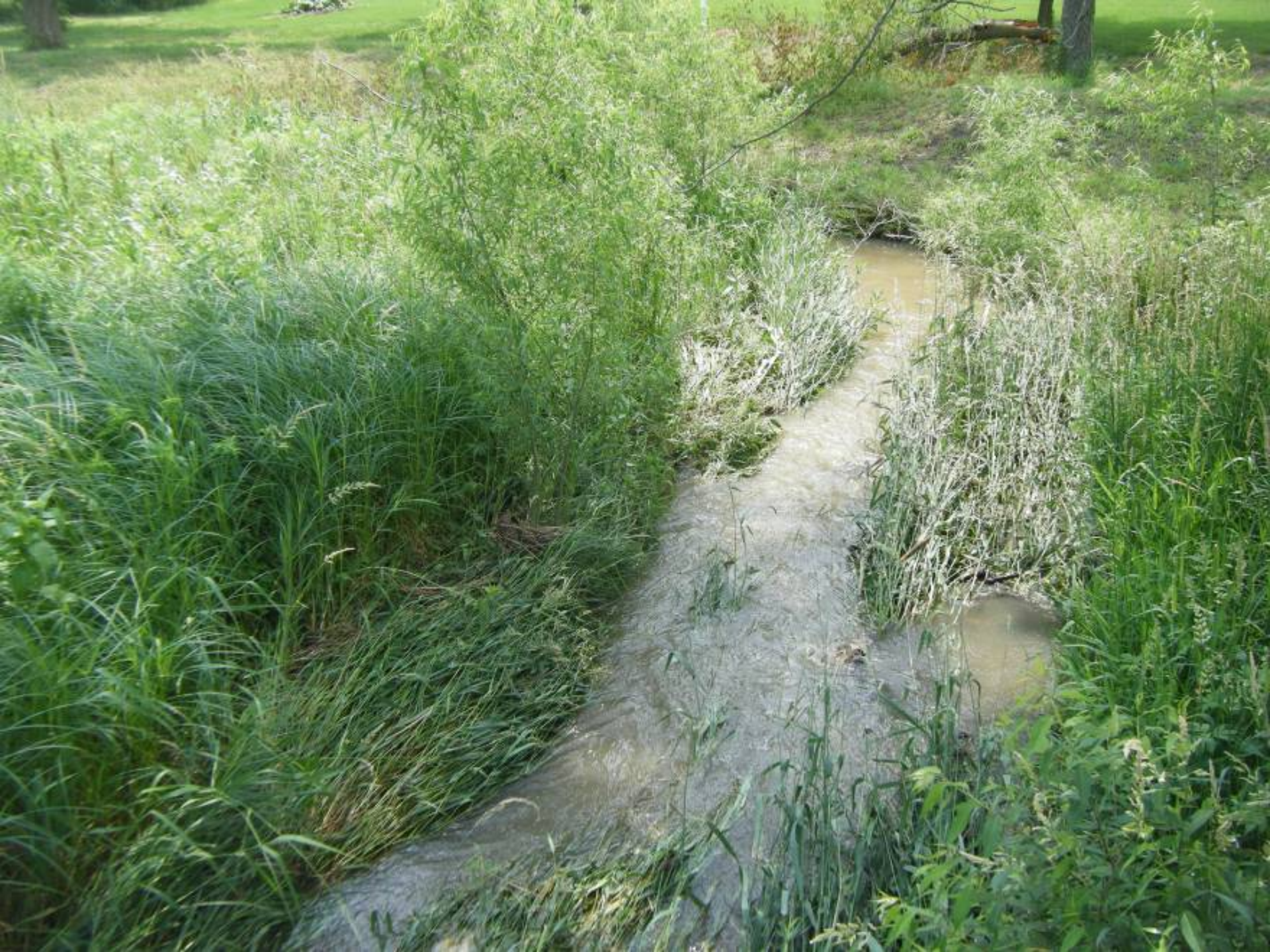


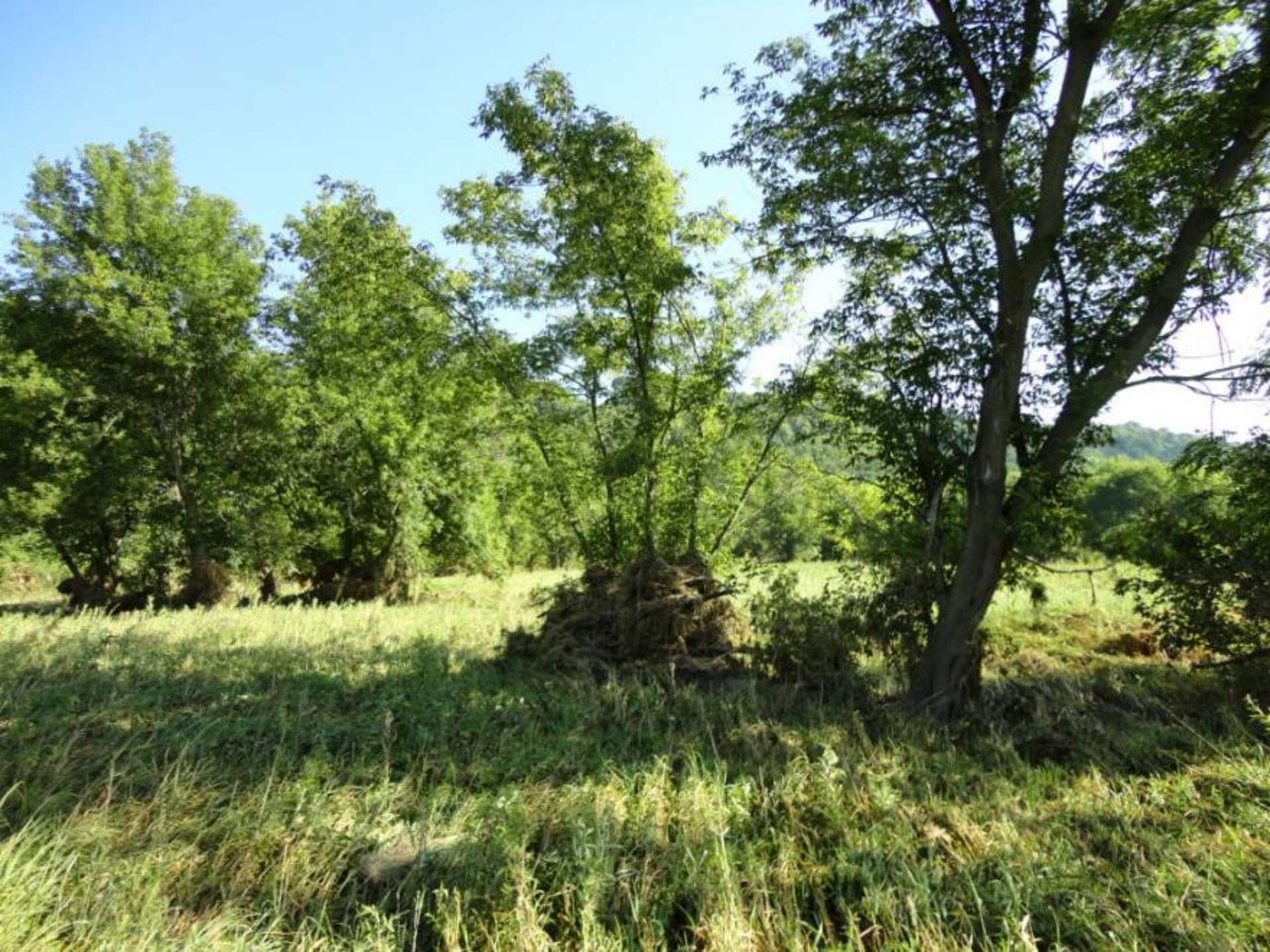


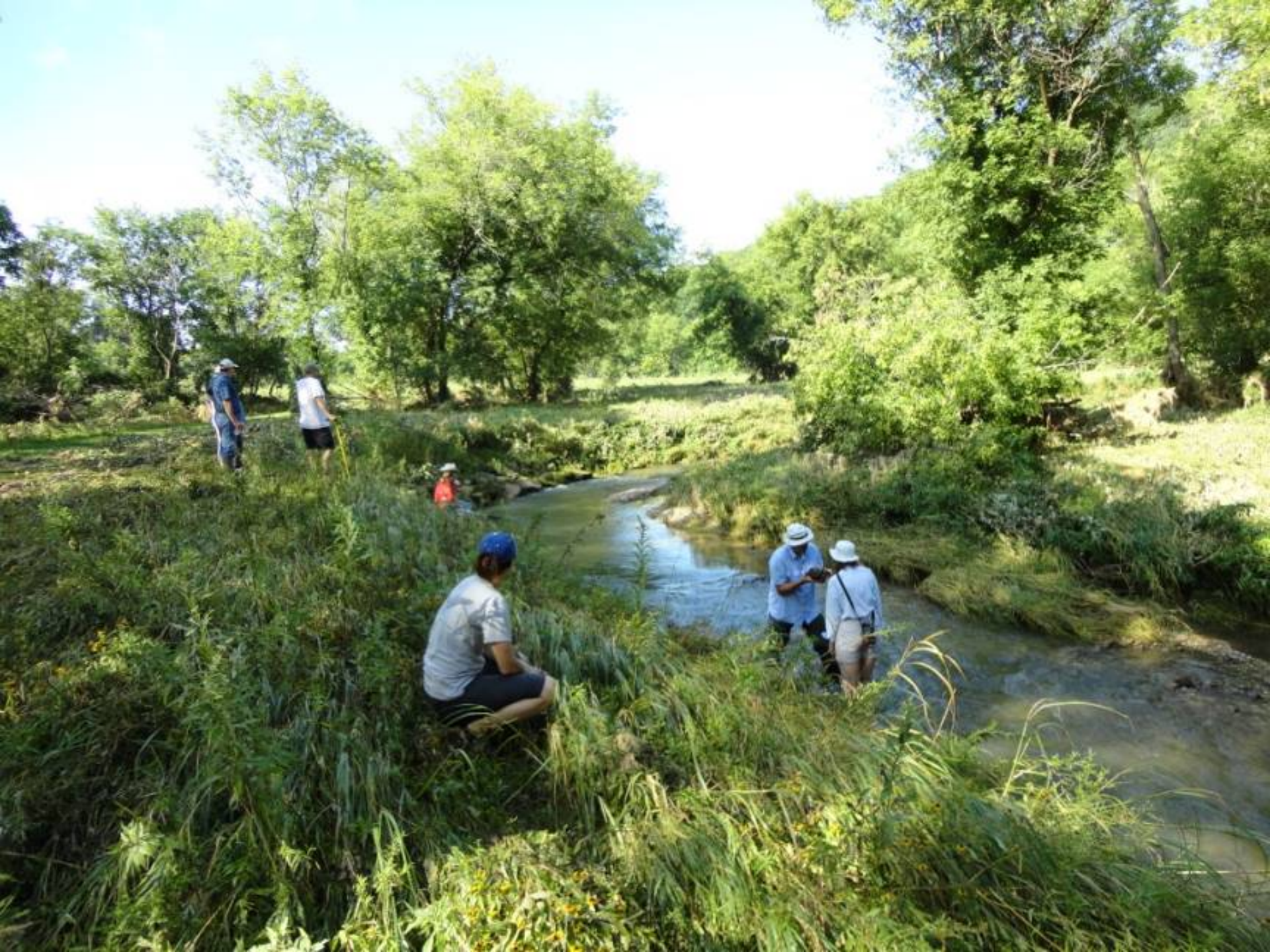


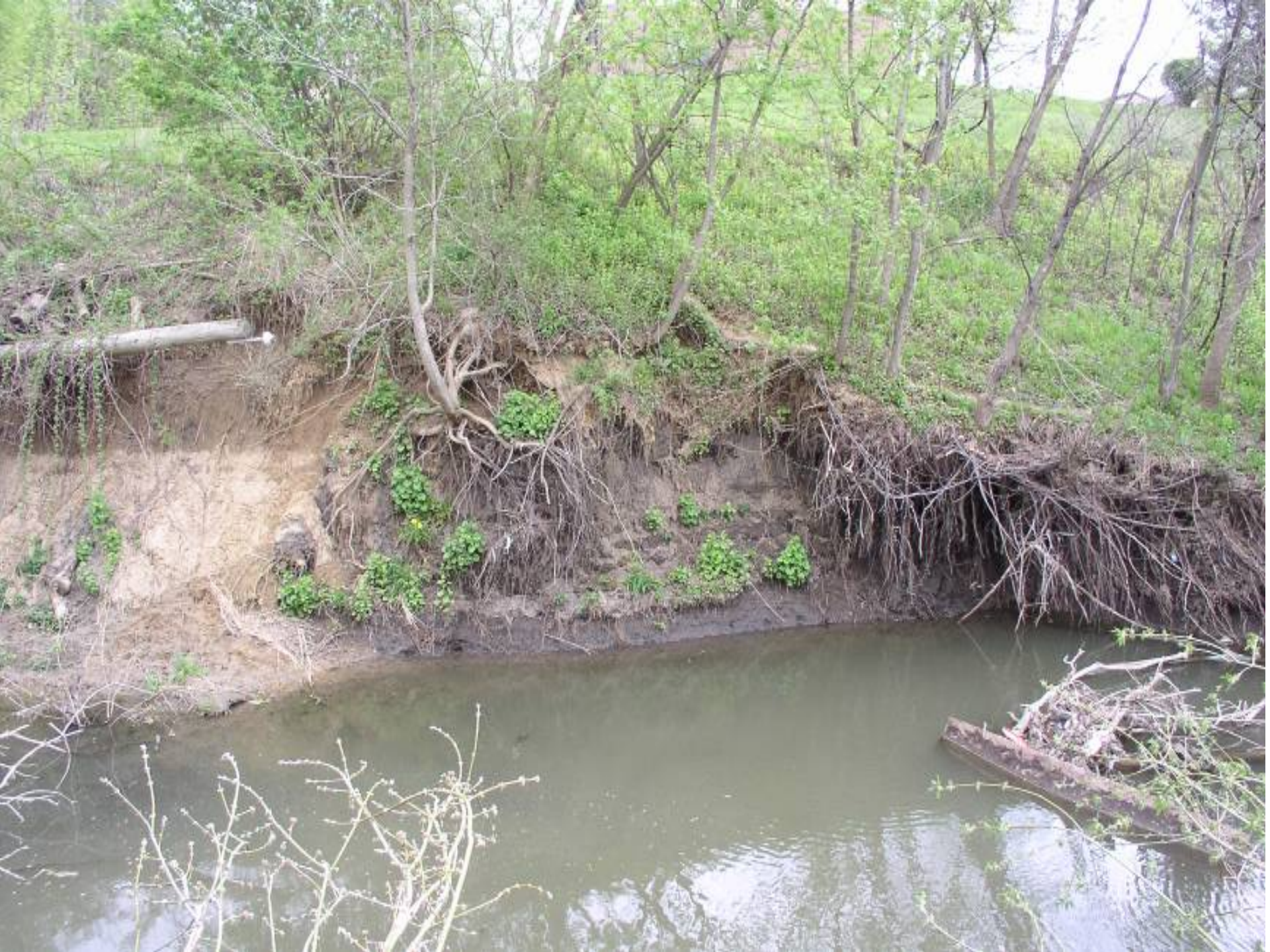




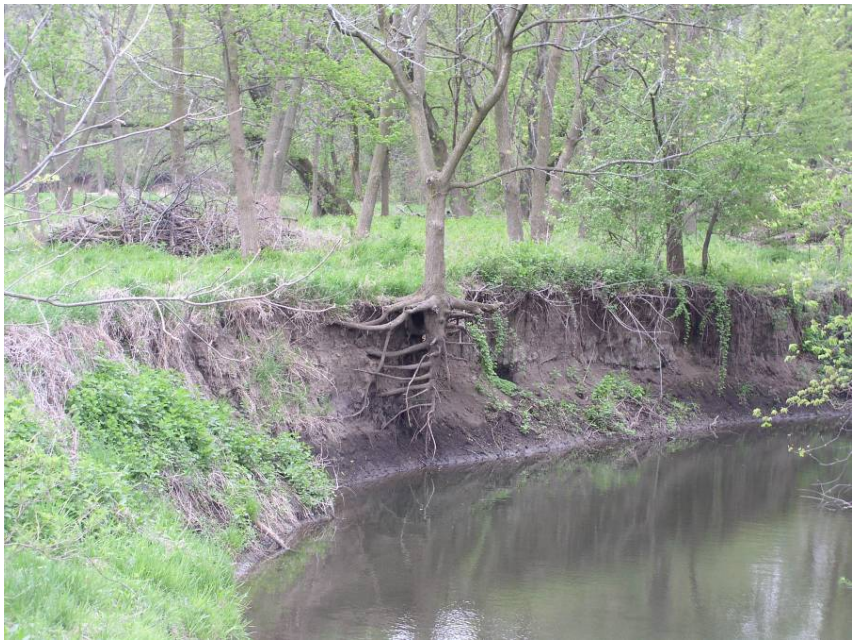


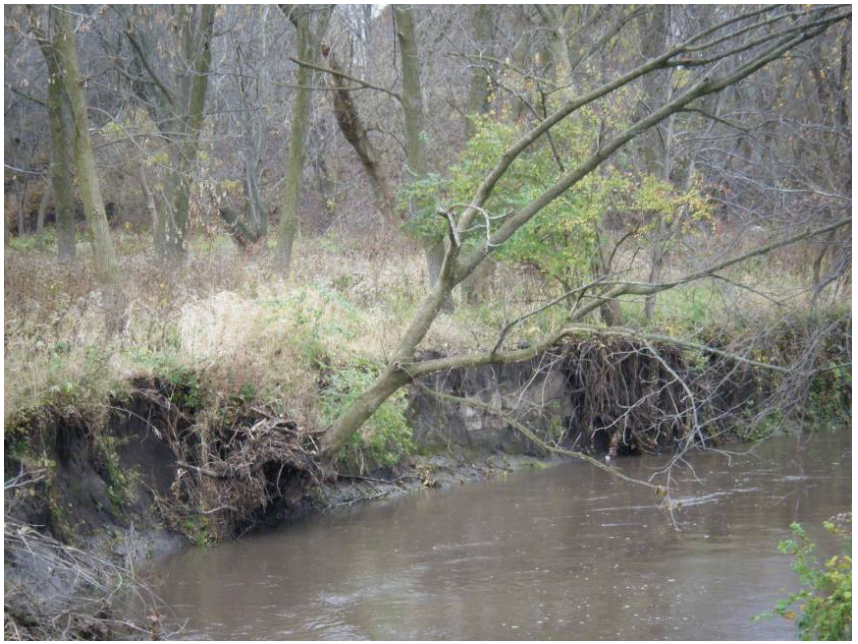






Crow Creek - Bettendorf





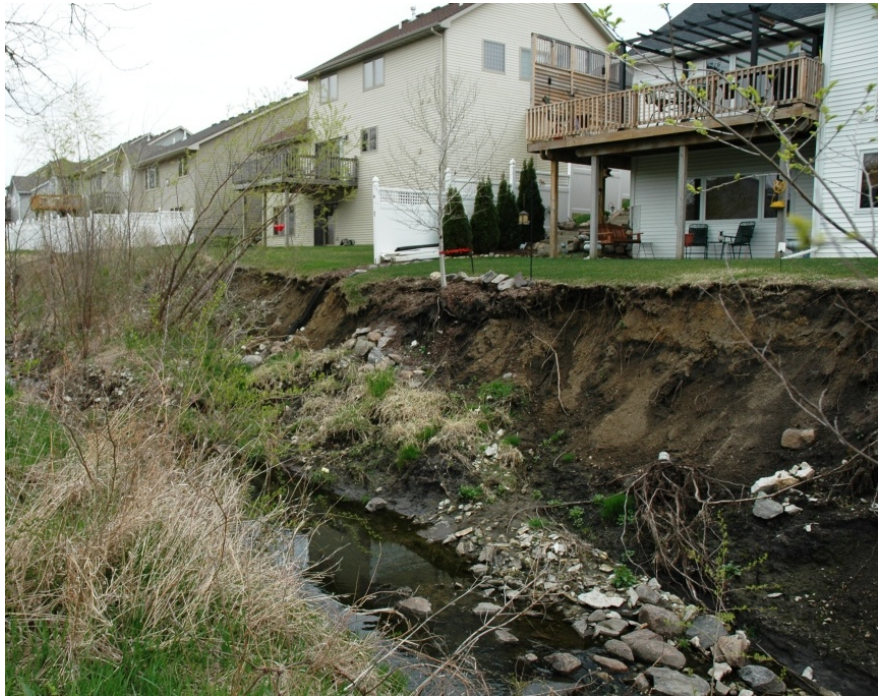
We should always talk about stream corridor stabilization (SCS)

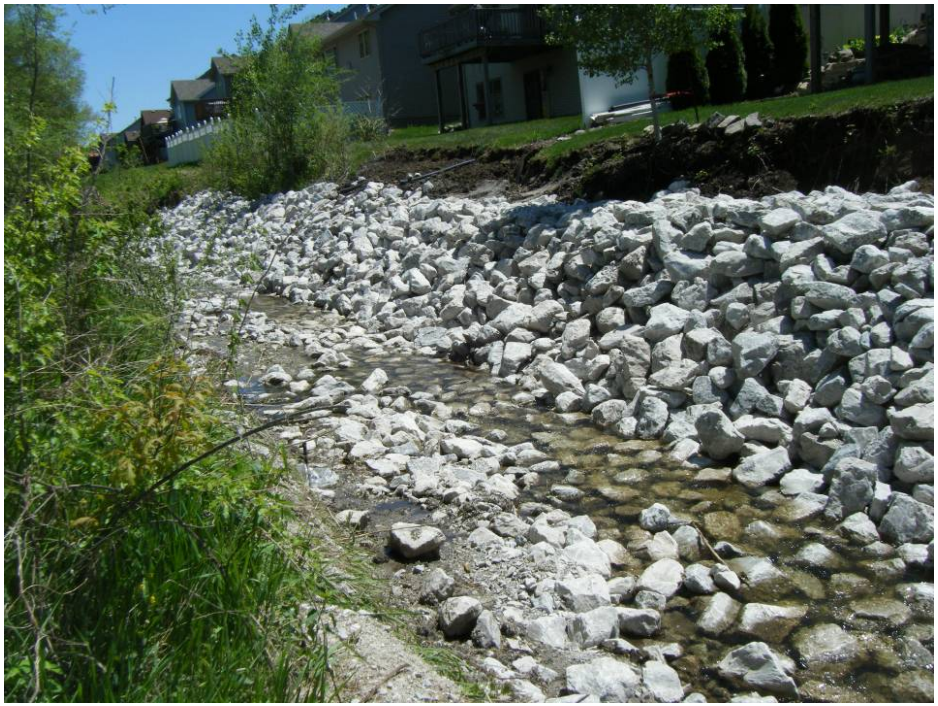
- It implies you are looking at the stream and the riparian corridor comprehensively – as a system.
- Key is to reduce the volume of runoff, reduce the frequency of flashy flows, reduce the energy of flows
- Best to stabilize the hydrology in the watershed by installing infiltration-based BMP's
- But - we often have immediate, urgent needs in ***urban*** stream corridors and stabilizing hydrodology takes time and is expensive
- We sometimes must be a rapid response team and do work in the stream corridor now to reduce erosion that threatens infrastructure, homes, and businesses.

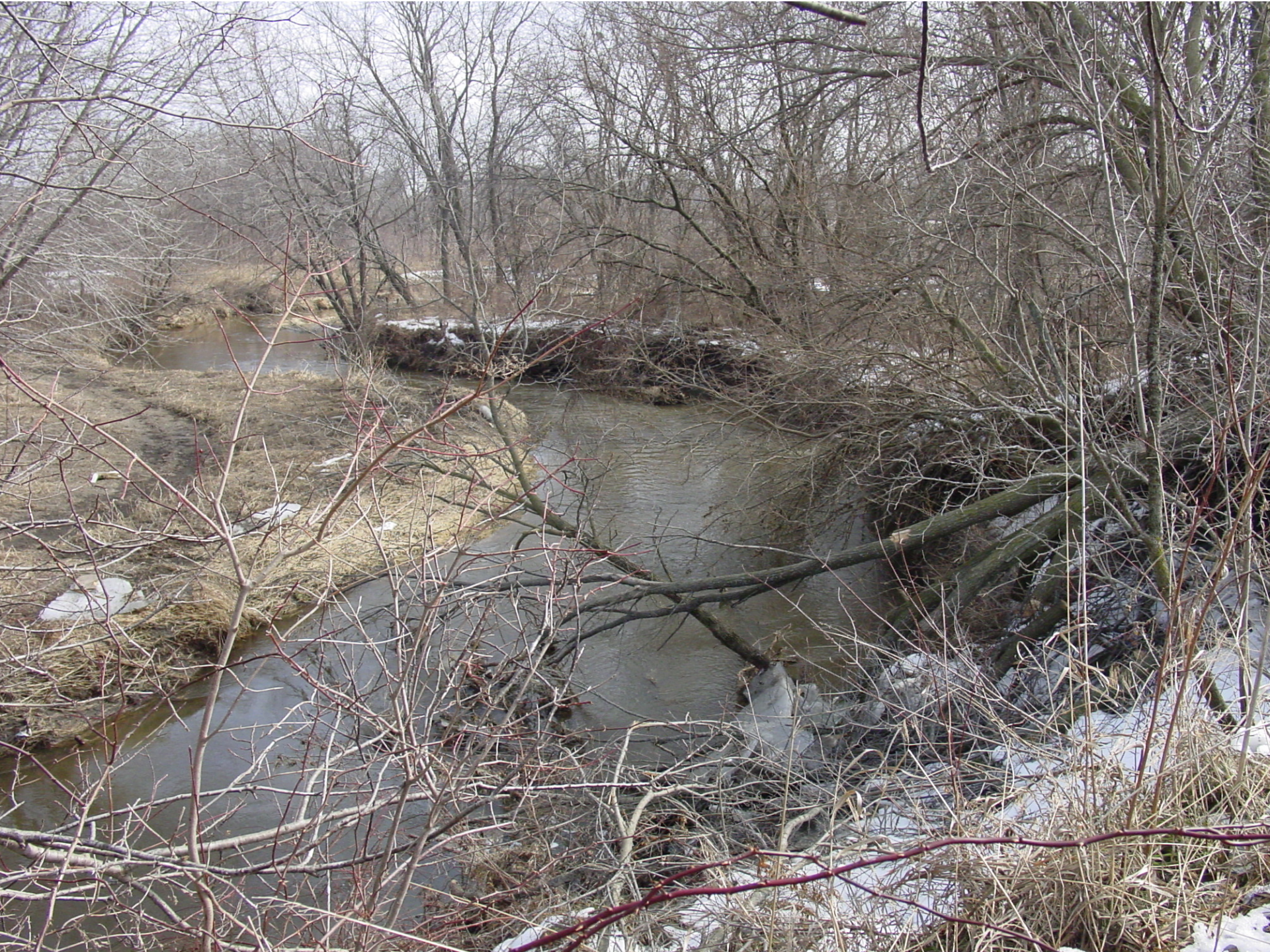
Urban streams need special consideration

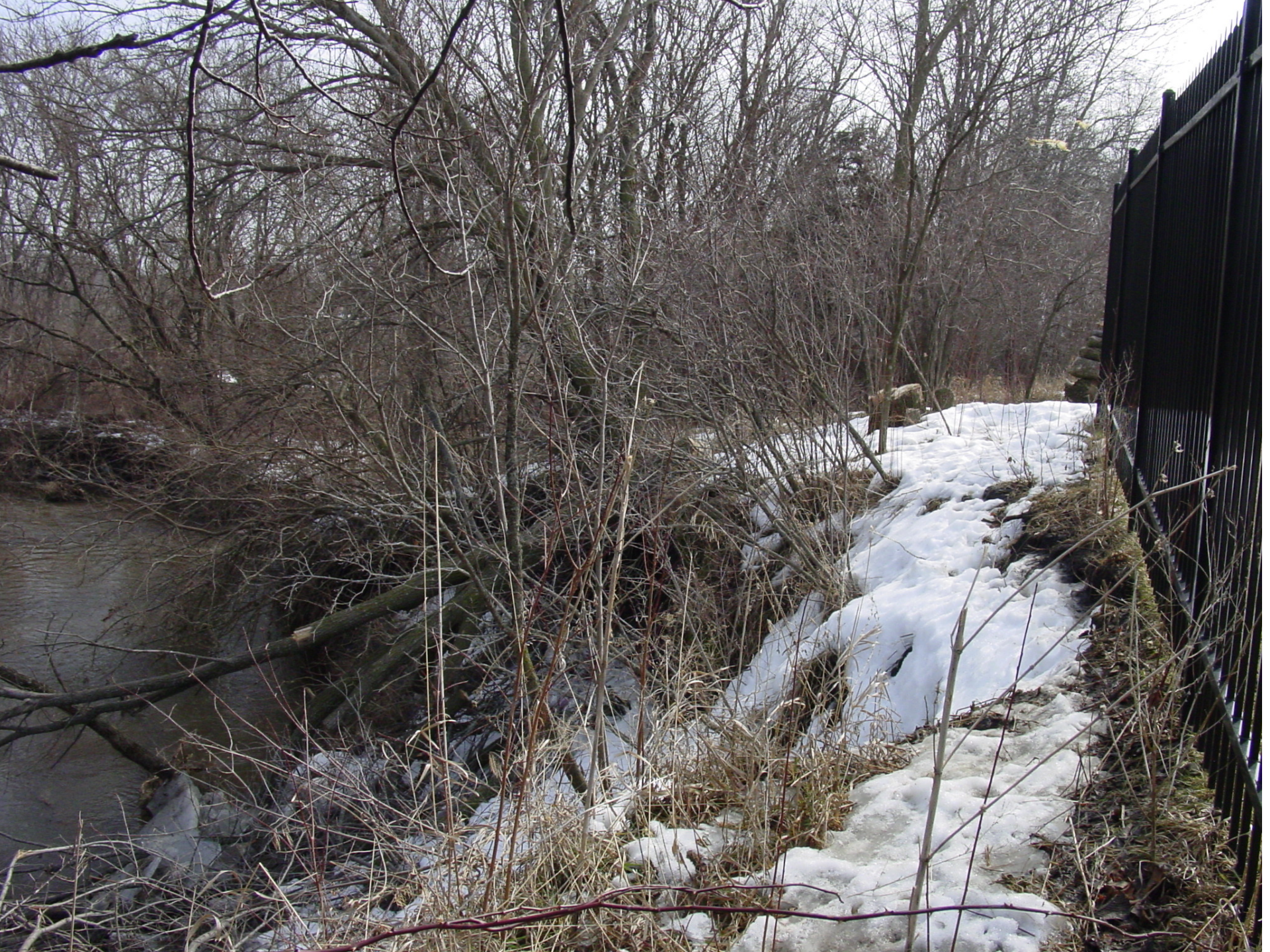
- Often have infrastructure in urban stream corridors (sanitary sewers, trails, etc)
- Often have private property that are at risk (i.e. houses, swimming pools, storage sheds, etc)
- Often have confined space in which to work on urban streams
- Often have stream corridors fragmented by multiple ownership (i.e. a new owner every 100 of stream reach)
- Stabilizing urban stream corridors is usually much more expensive than rural stream corridors

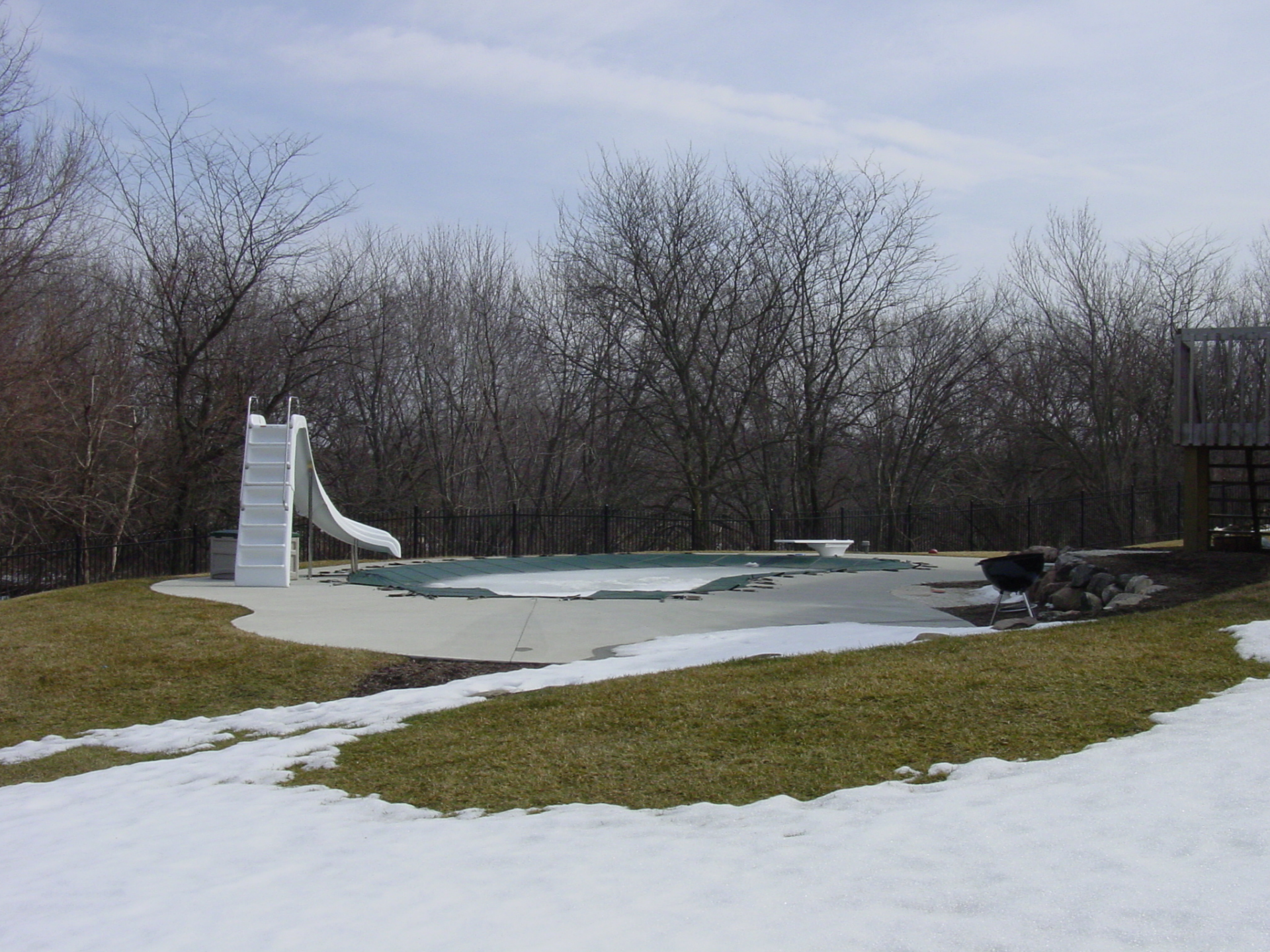
What do you do?



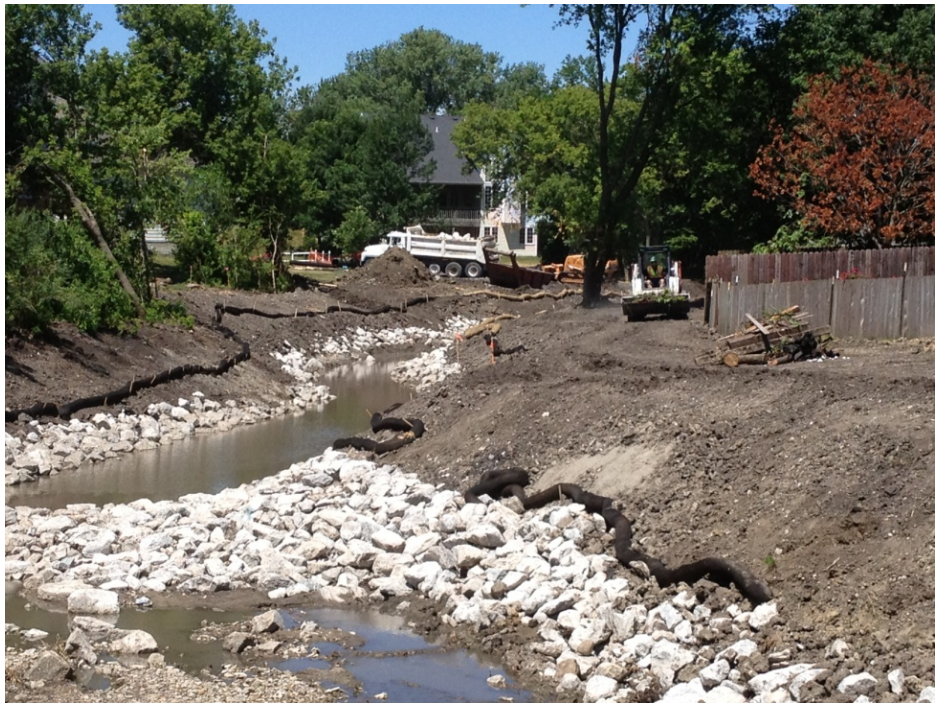


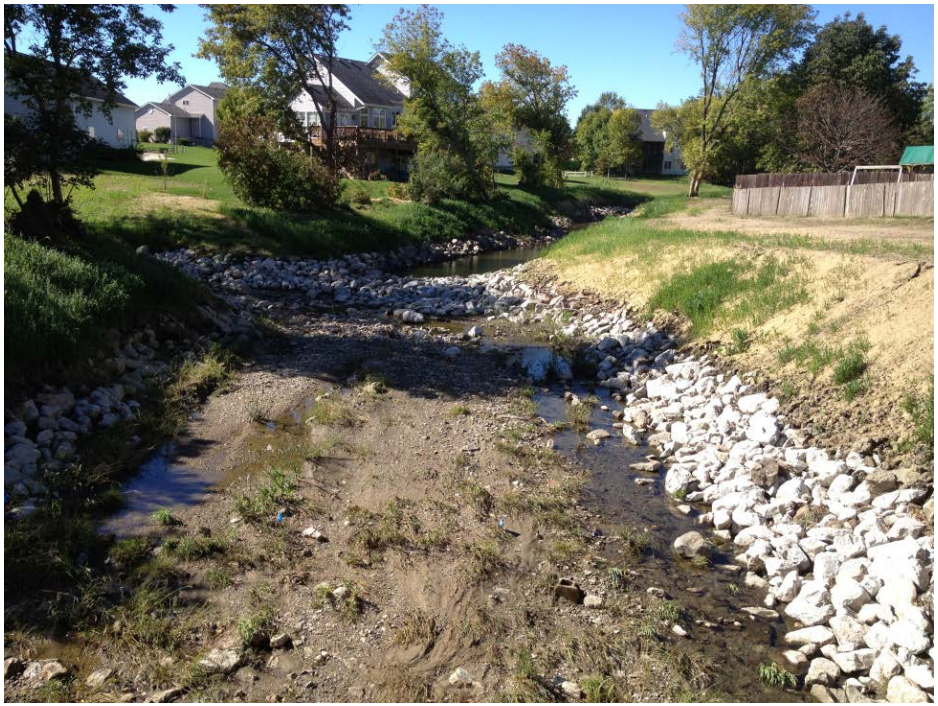




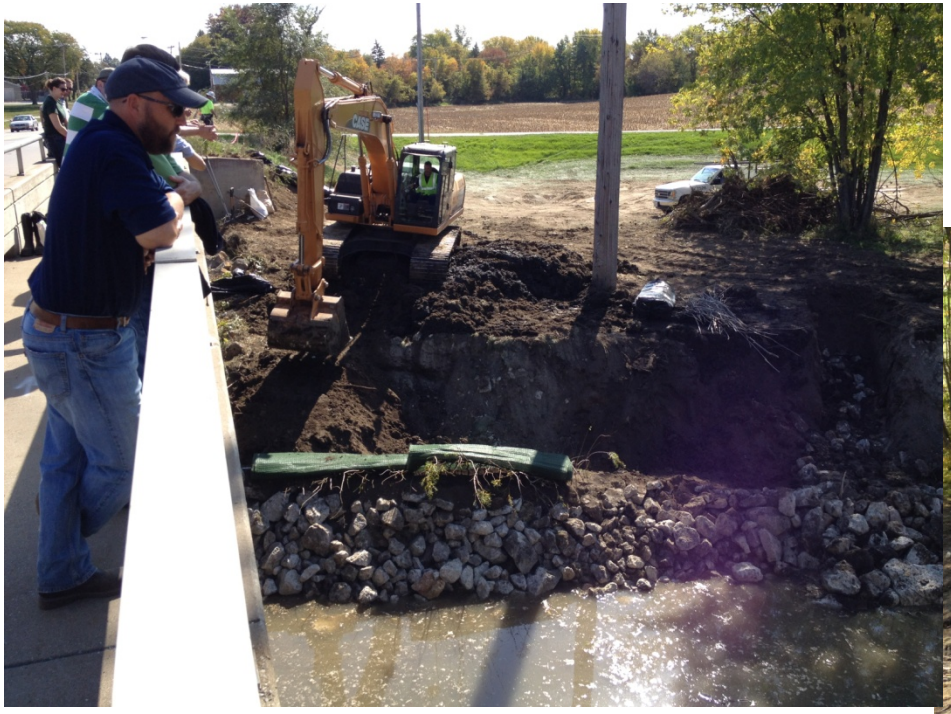


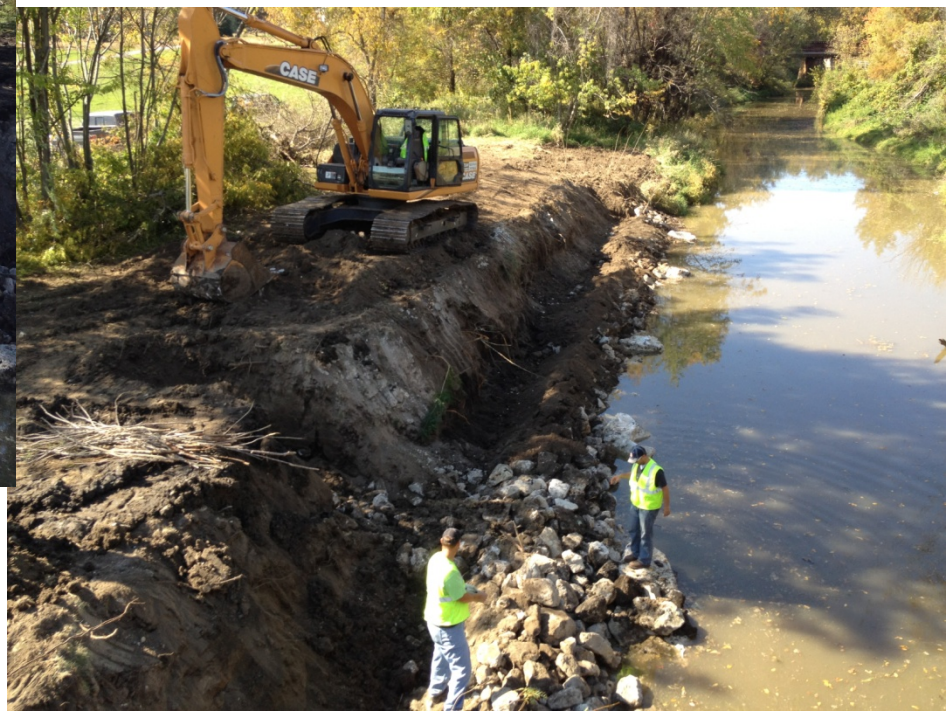
Working in tight spaces



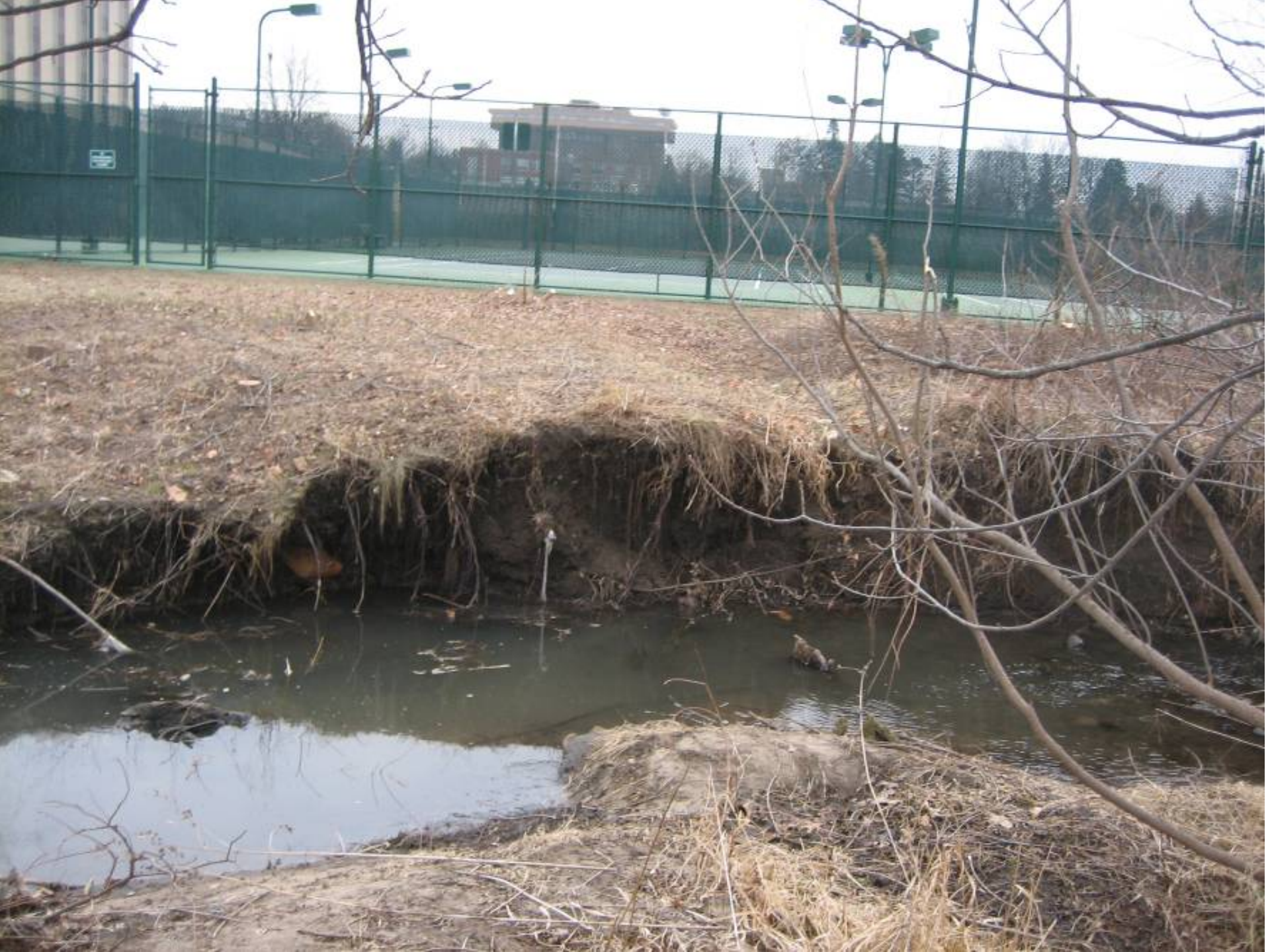


Protecting a bridge and sanitary sewer
Duck Creek - Davenport

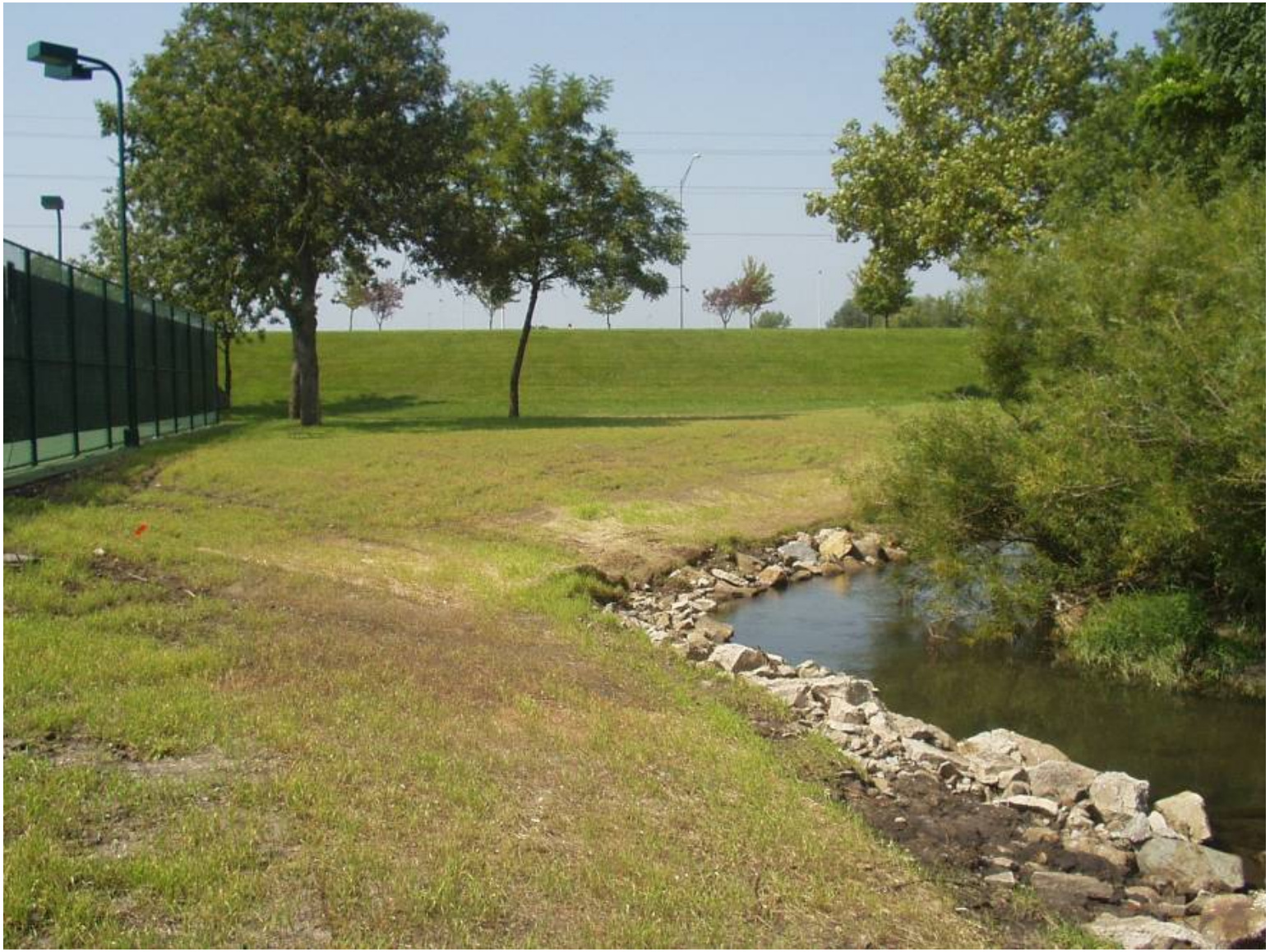


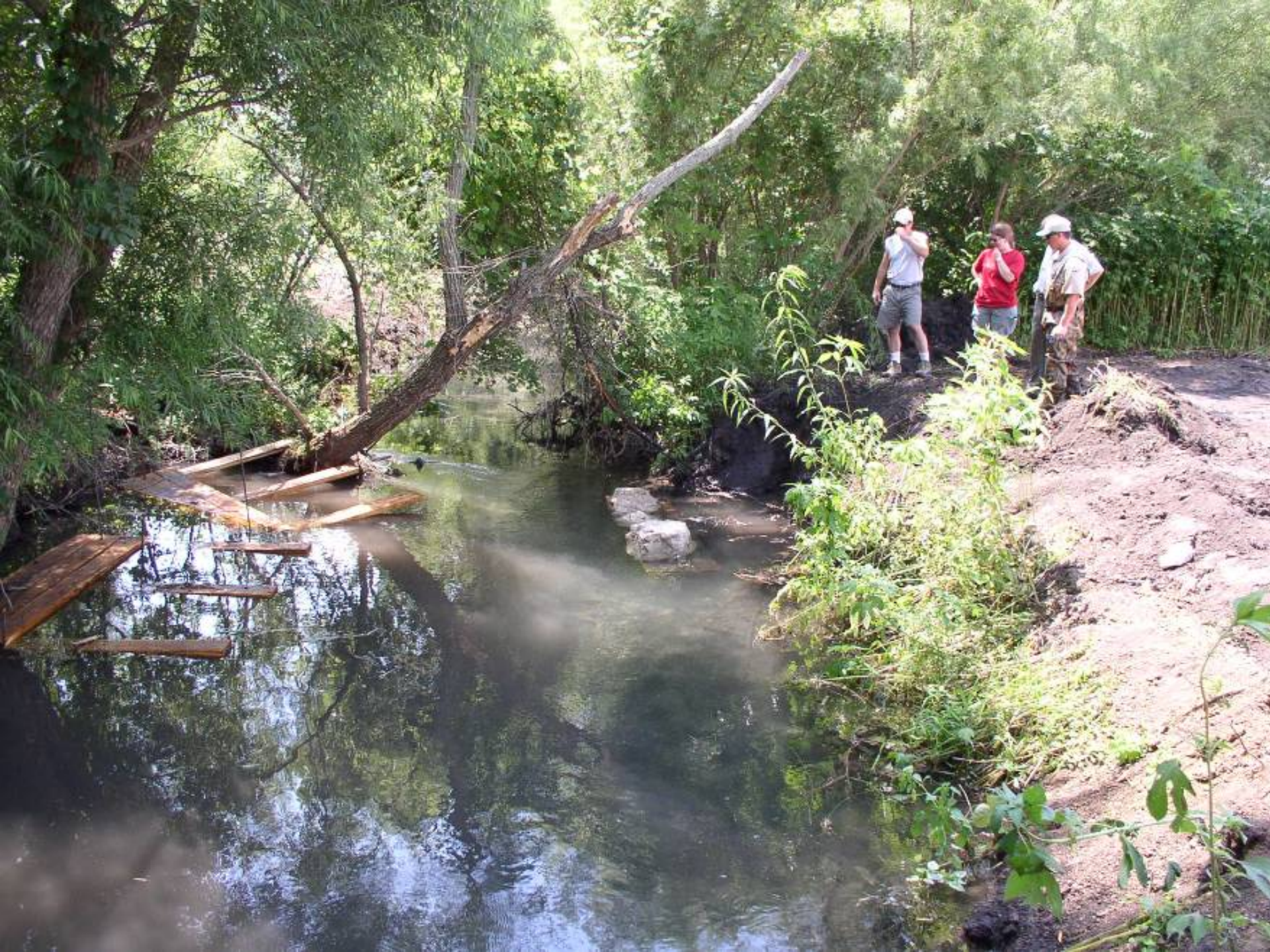


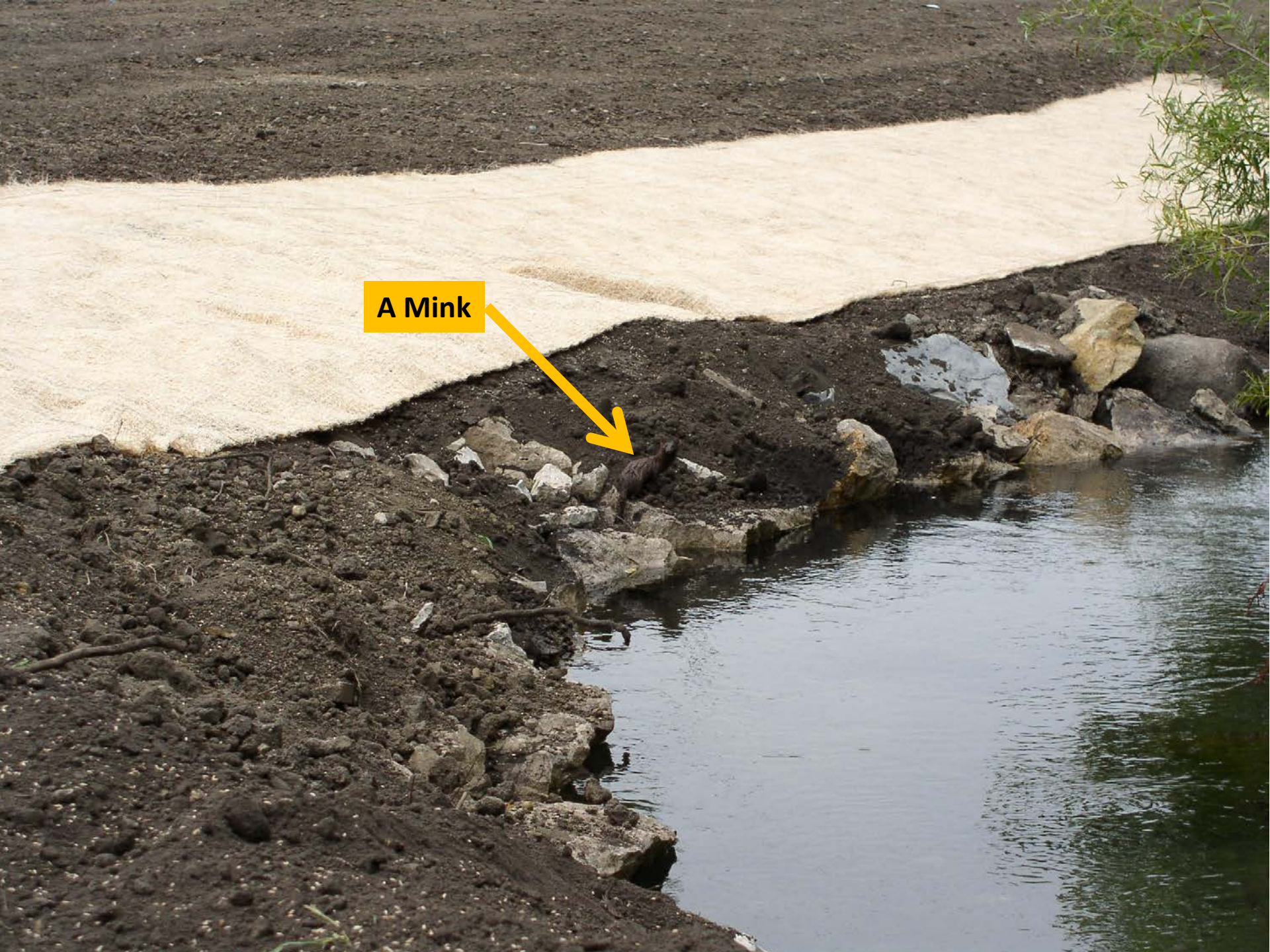
Incorporating habitat enhancement with SCS on the campus of UNI



Dry Run Creek Watershed Project



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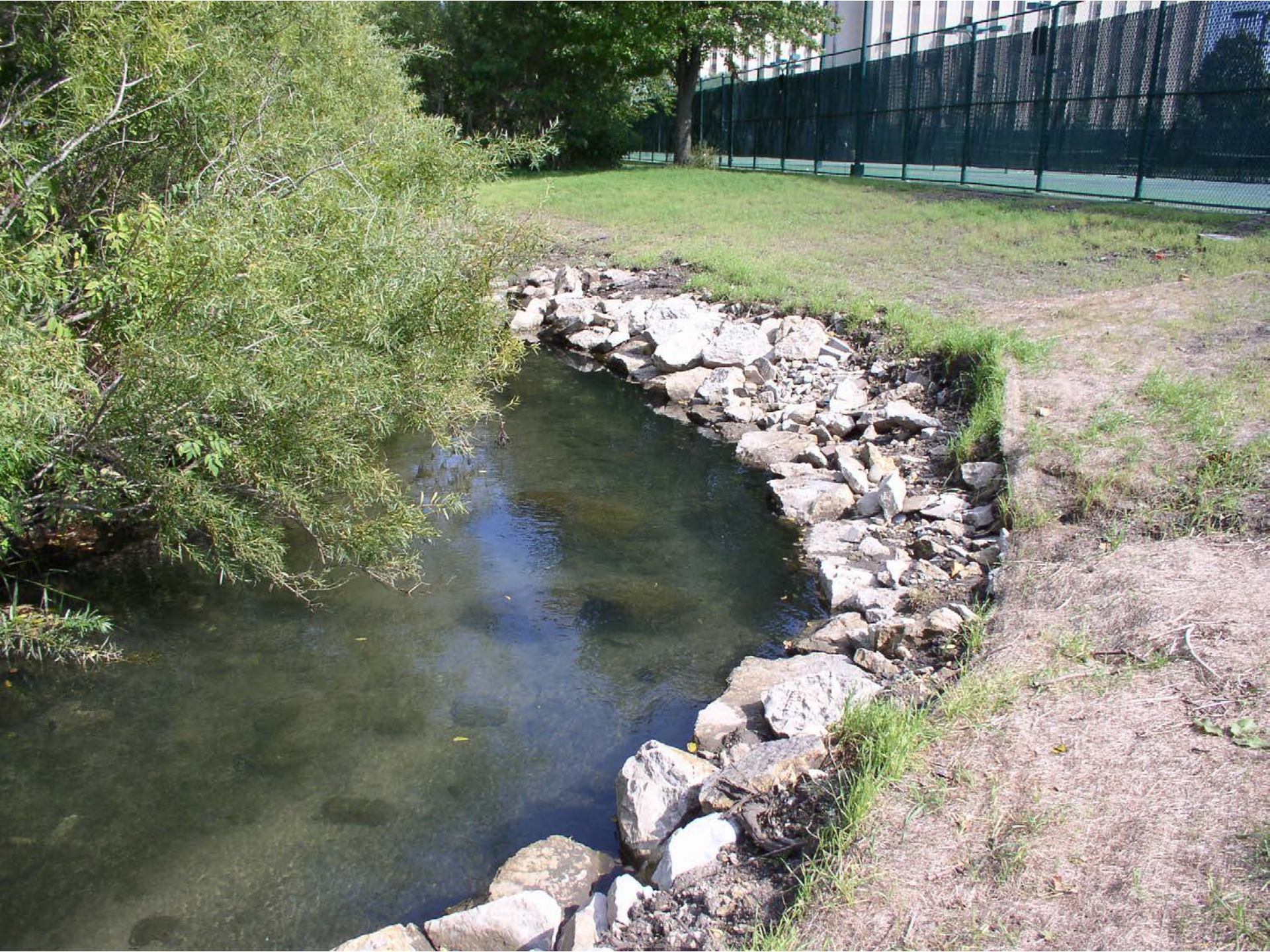
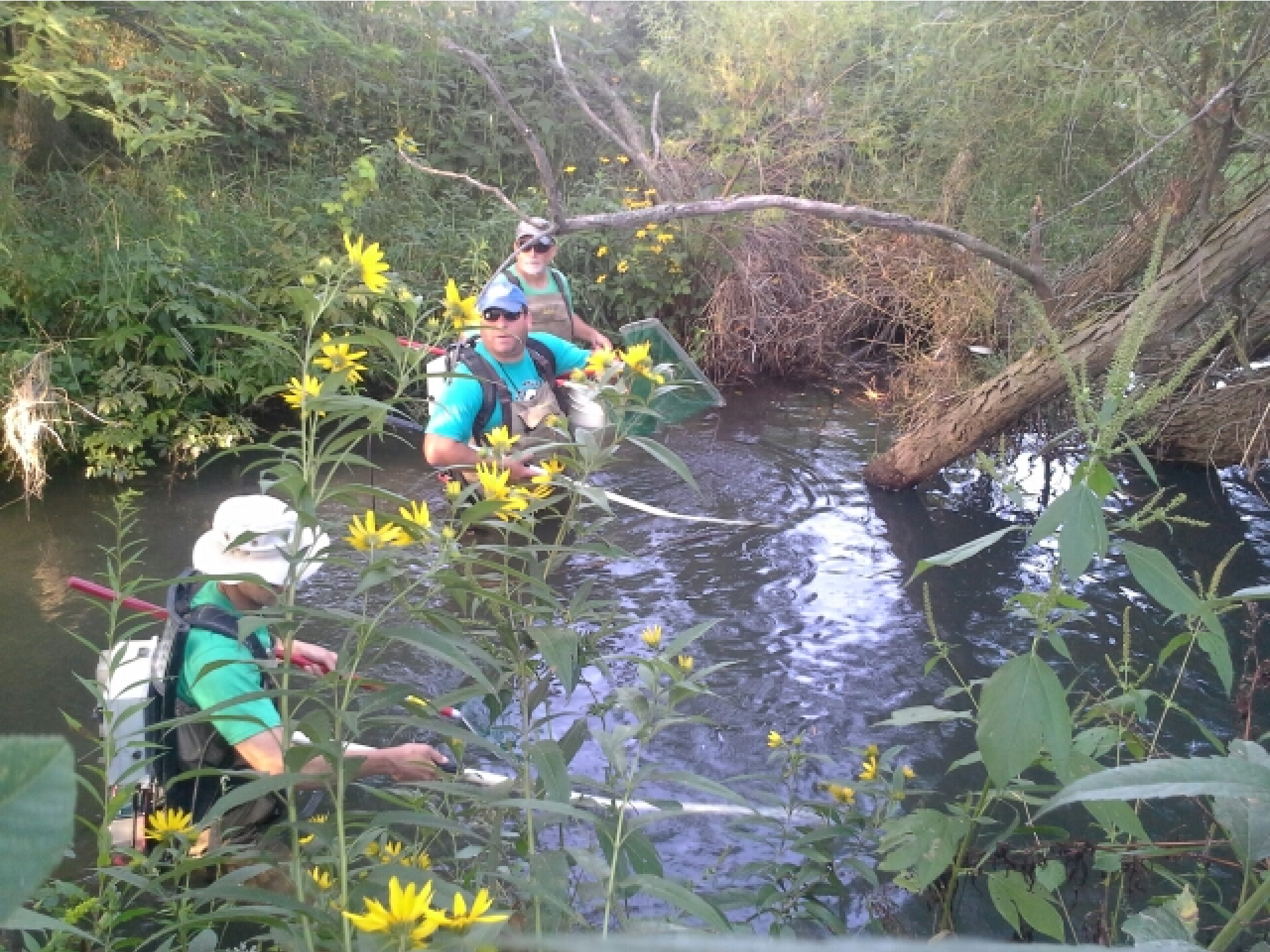
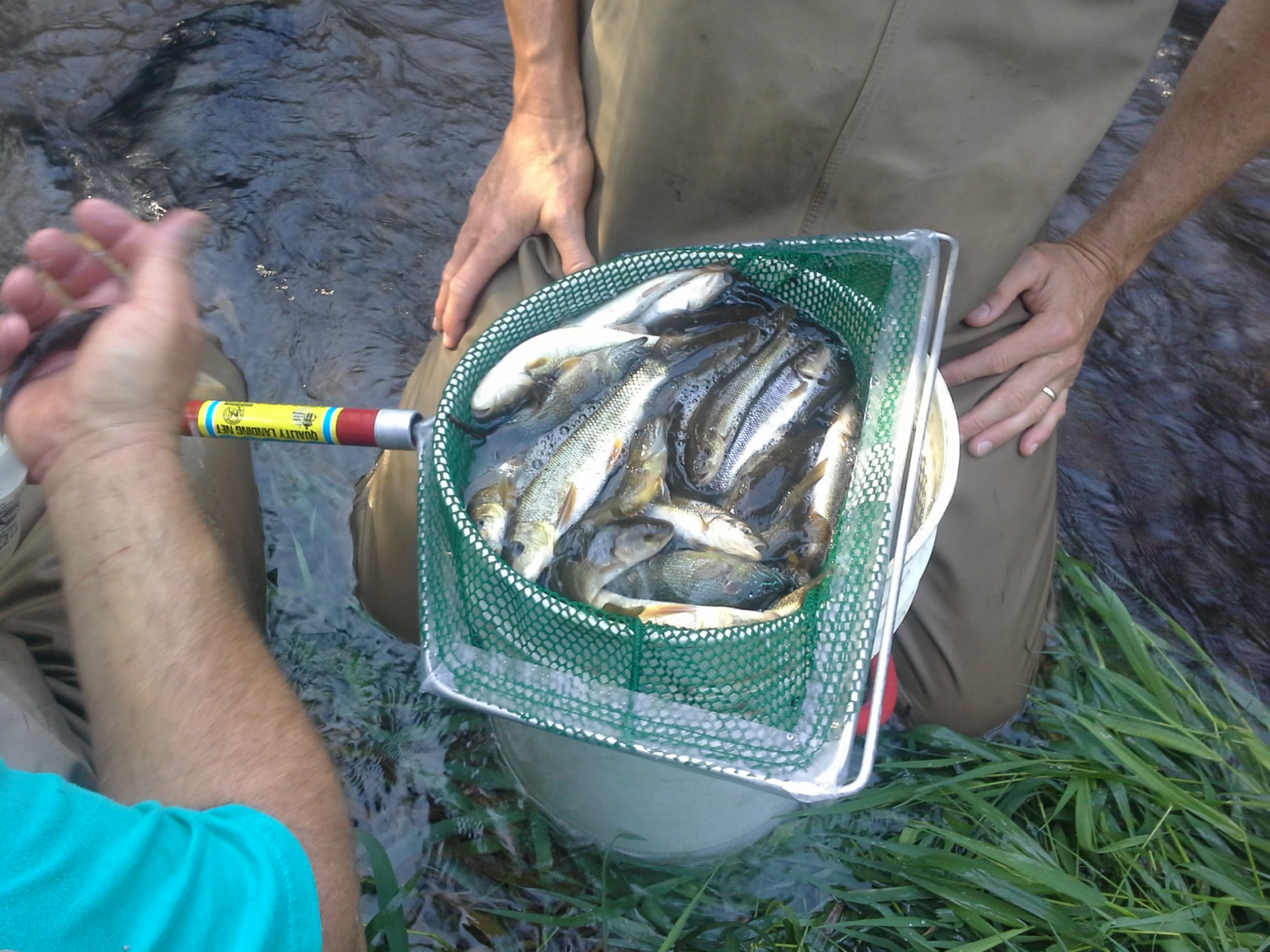
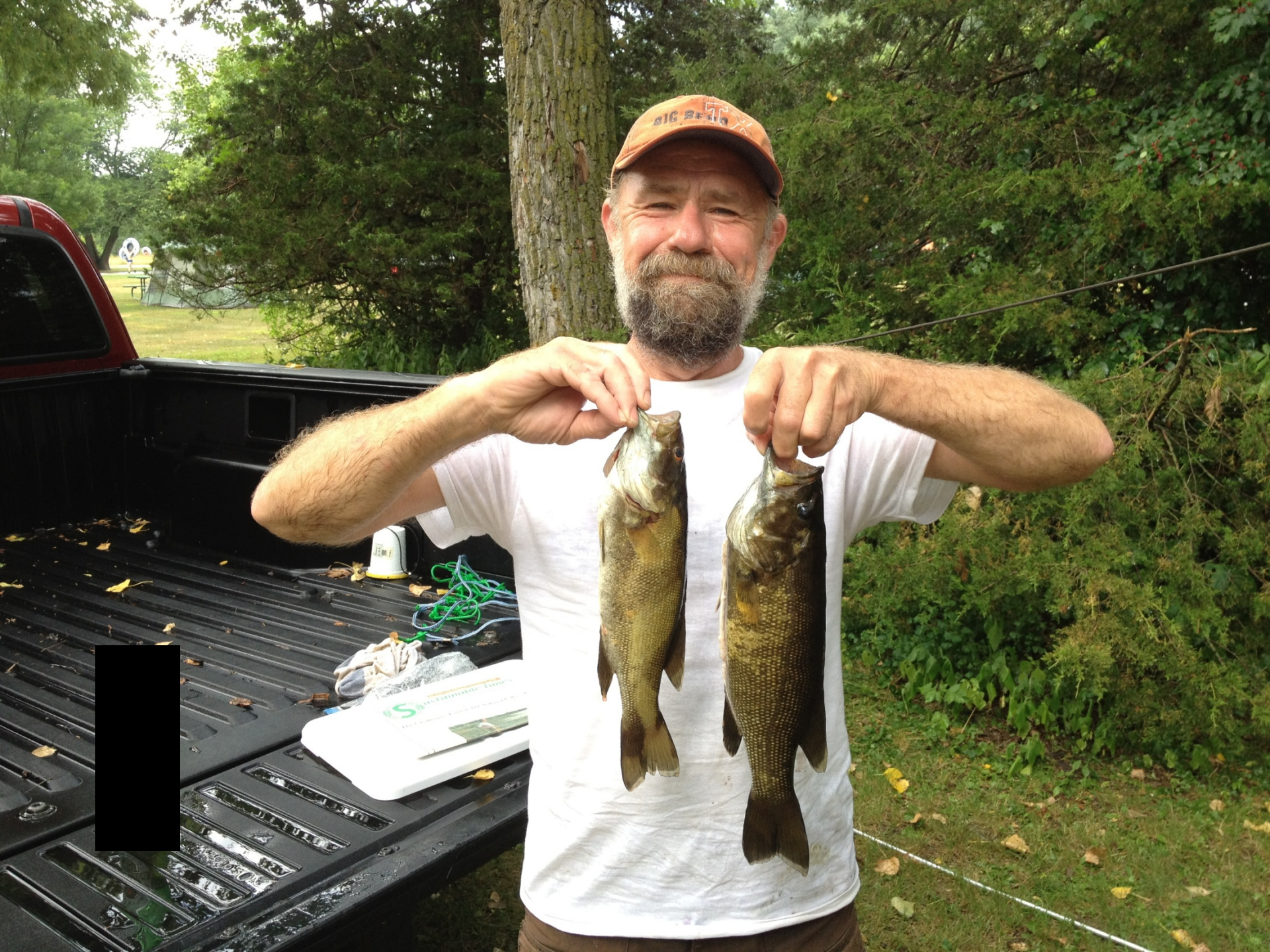





QUALITY LANDING NET



Establish the Iowa SCS Program (Stream Corridor Stabilization Program)

- Need a program dedicated to stabilizing stream corridors
- Need financial and technical assistance
- Currently, limited opportunity to fund costly urban stream stabilization – unless it is part of a watershed project
- Could be set up as a grant program so applicants must put together comprehensive SCS projects and compete for funding
- Should utilize a committee of technical people with expertise in SCS issues

Technical SCS Committee

1. One rep from ISU natural resource dept
2. One rep from U of I flood center / IIHR
3. One rep from UNI earth science dept
4. One rep from an Iowa college with a stream / water quality specialty
5. One rep from IDALS-DSC
6. One rep from DNR
7. One rep from NRCS